

SUPPLEMENTARY MATERIAL

related to

Interaction of corroding iron with seven bentonites in the alternative buffer materials field experiment (ABM2)

Paul Wersin, Jebril Hadi*, Andreas Jenni, Daniel Svensson, Jean-Marc Grenèche, Patrik Sellin, Olivier X. Leupin

S1 SEM-EDX CHEMICAL PROFILES

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S1-1: ABM2 Block #08 – MX80 pellets

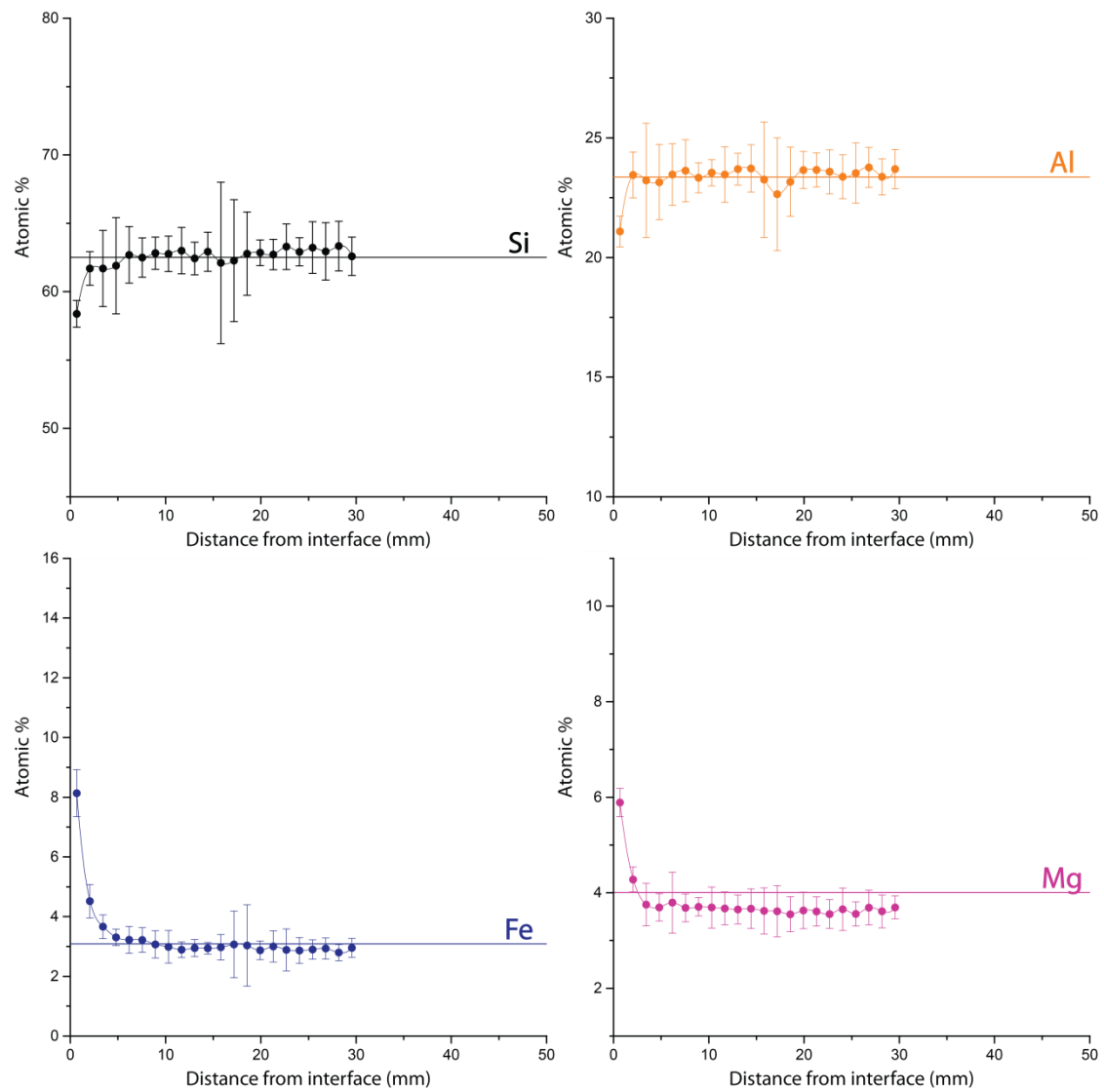


Fig. S1-1 Chemical profiles of major elements Si, Al, Fe and Mg.

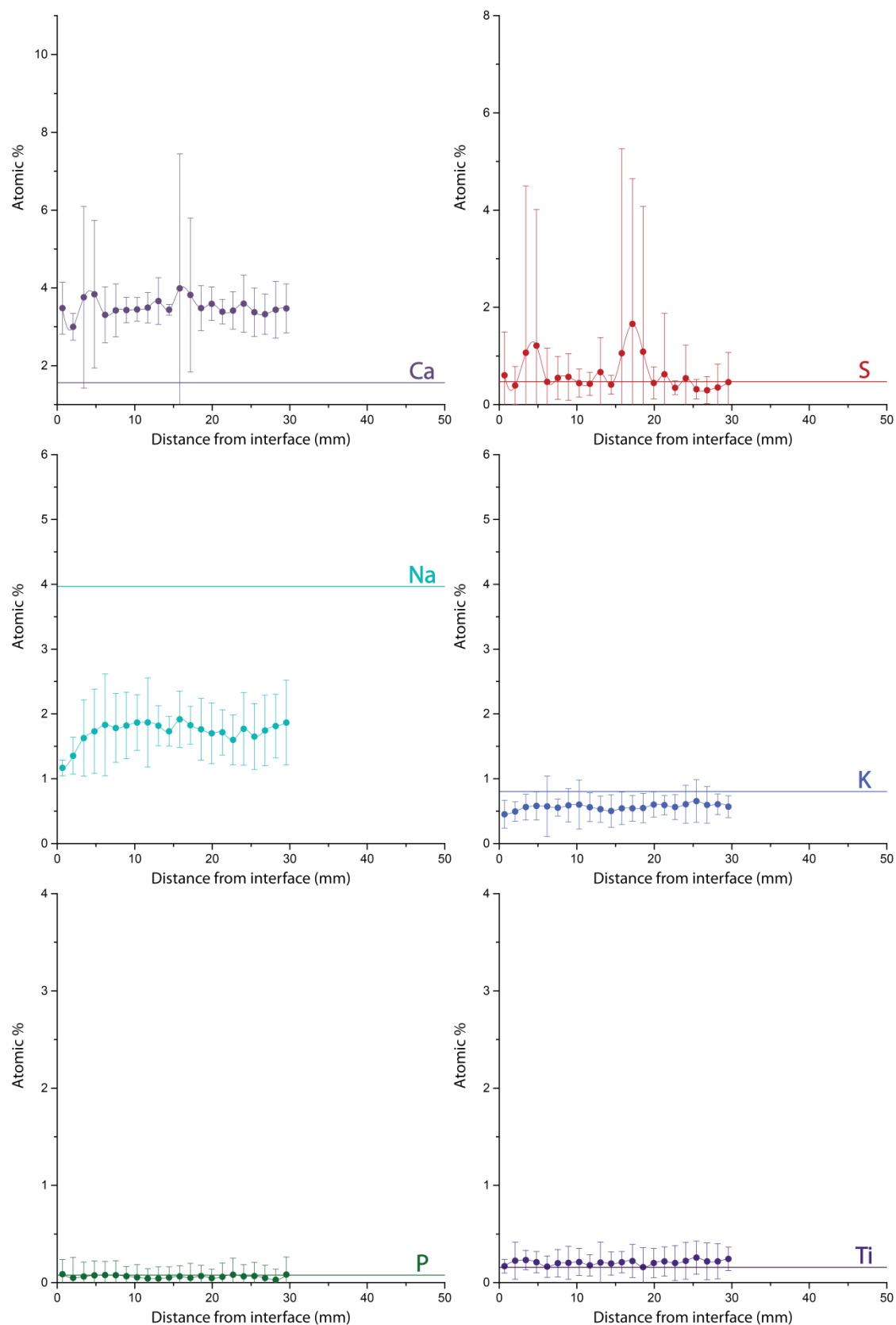


Fig. S1-2 Chemical profiles of minor elements Ca, S, Na, K, P and Ti.

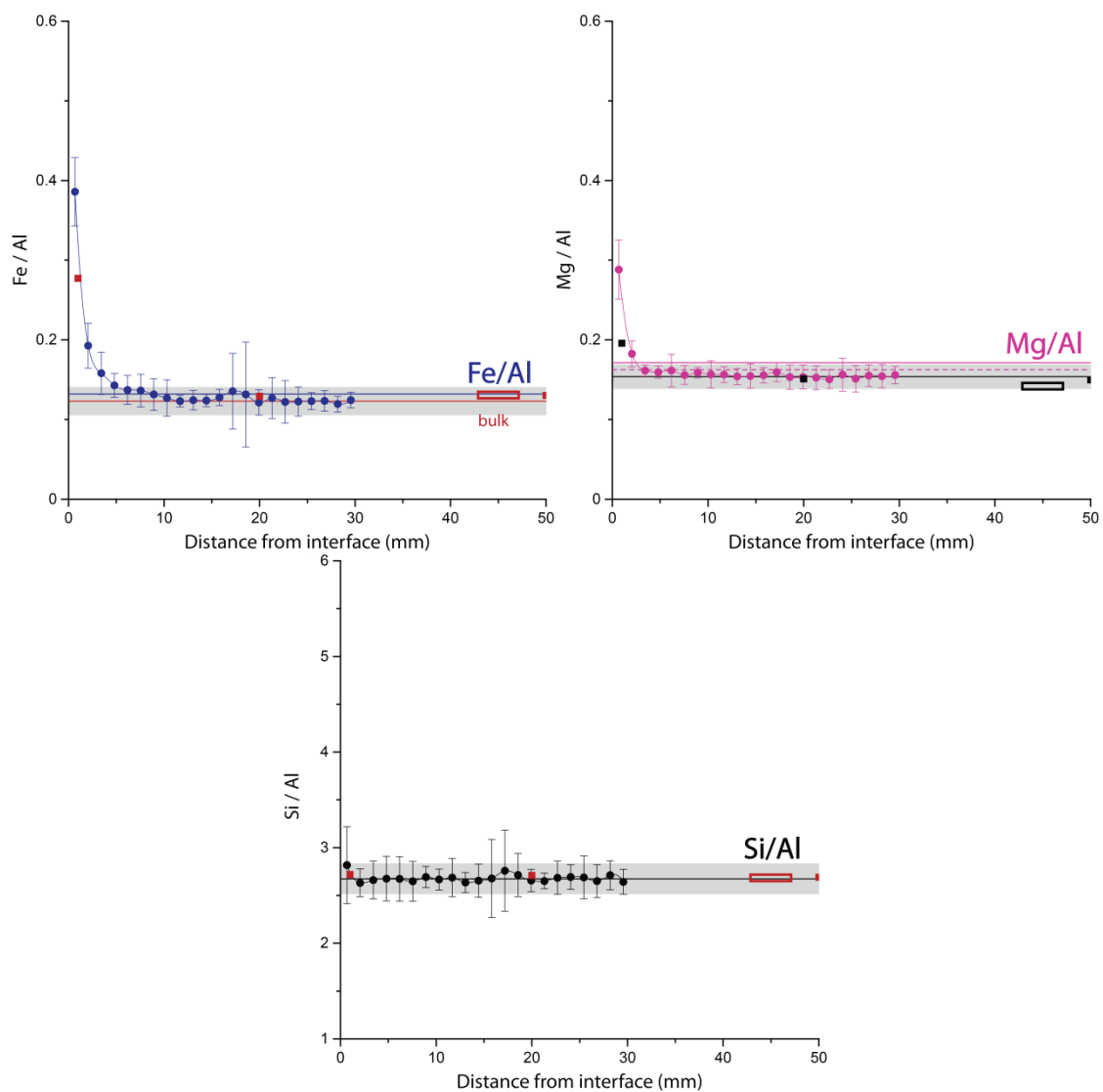


Fig. S1-3 Al-normalized chemical profiles of major elements Fe, Mg and Si. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm). Empty rectangles represent present XRF measurements on powdered ABM2 samples (bulk sample at 45 mm).

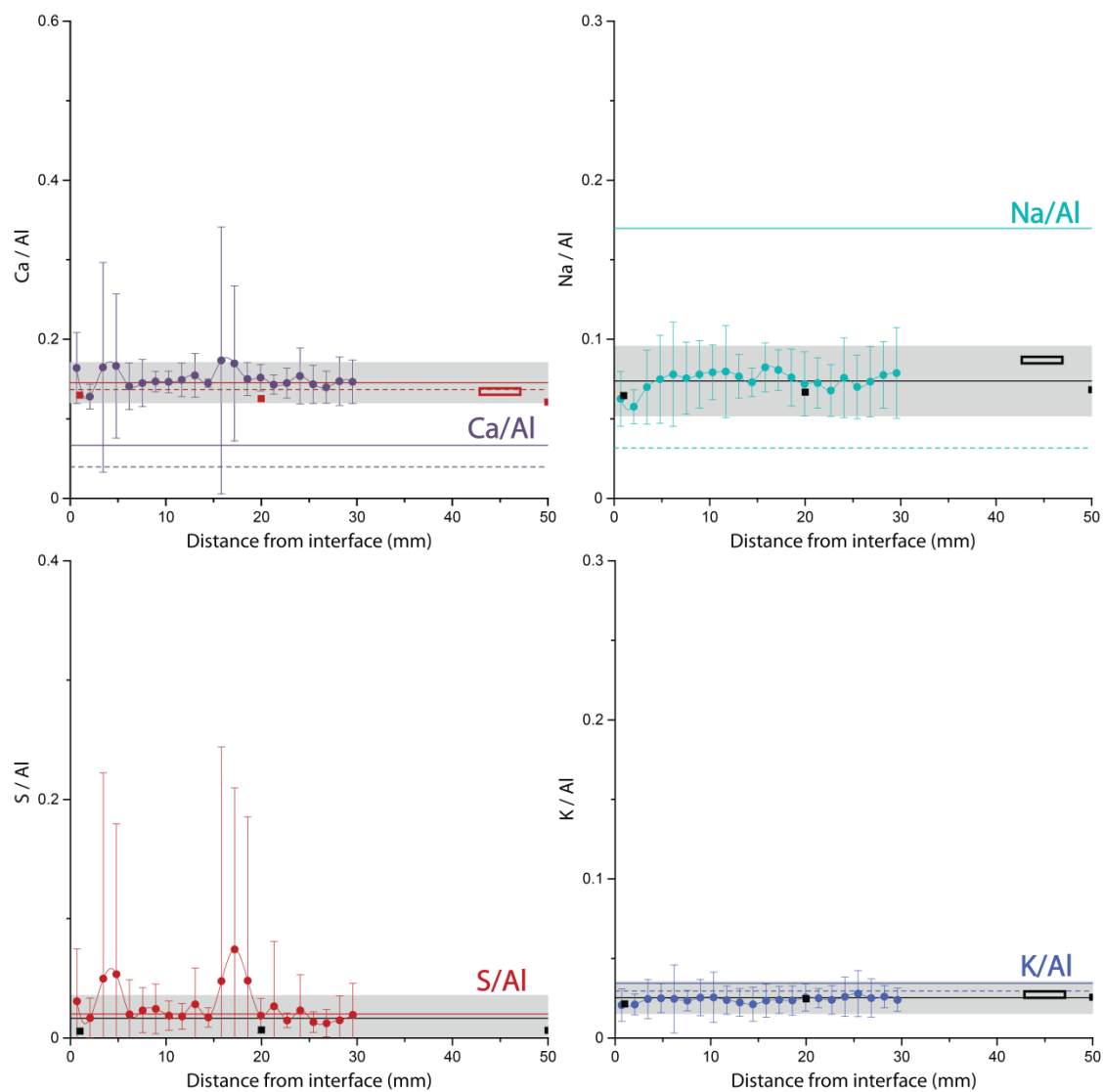


Fig. S1-4 Al-normalized chemical profiles of minor elements Ca, Na, K and S. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm). Empty rectangles represent present XRF measurements on powdered ABM2 samples (bulk sample at 45 mm).

S1-2: ABM2 block#11 - Ibeco seal IBE03

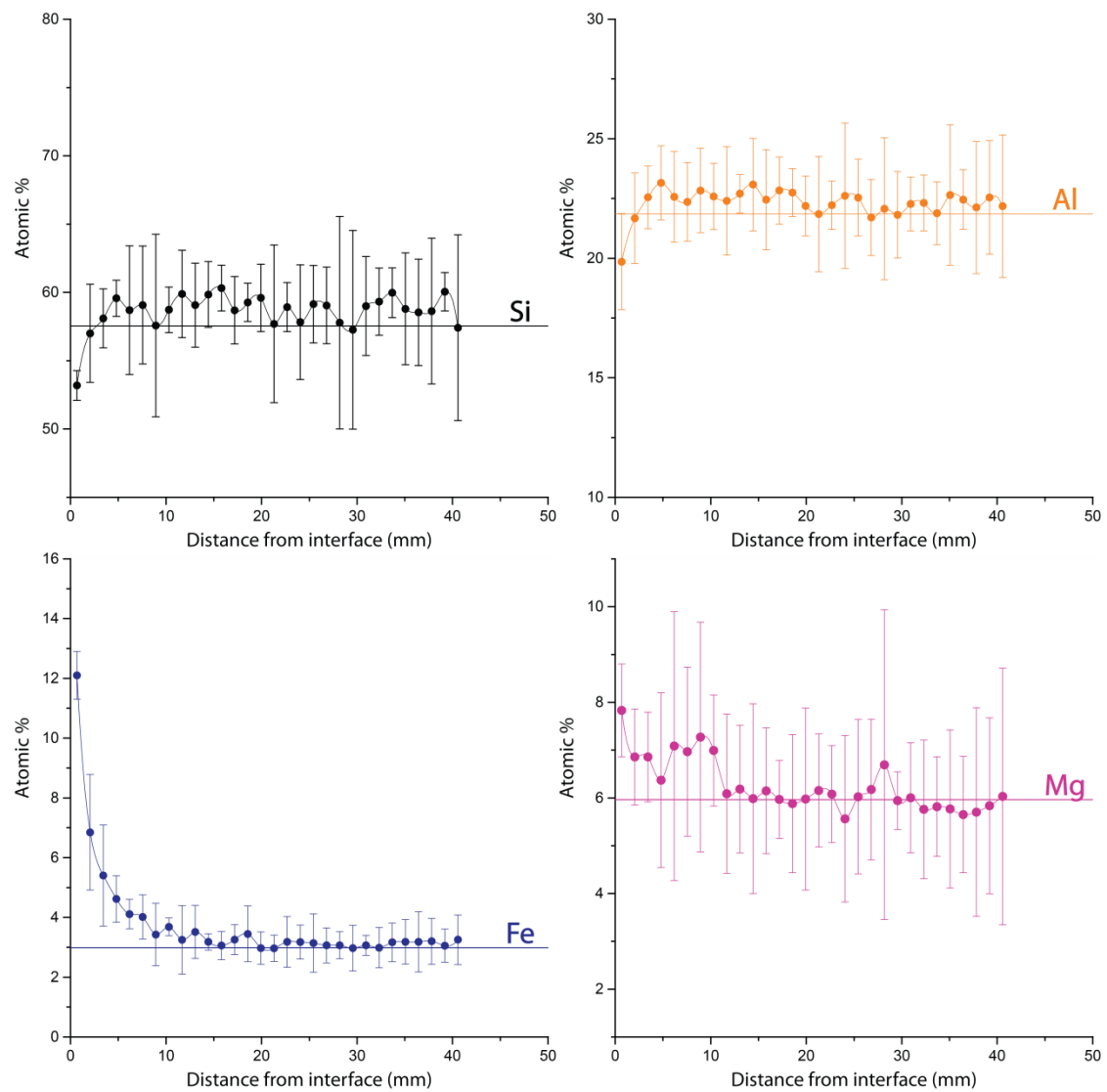


Fig. S1-5 Chemical profiles of major elements Si, Al, Fe and Mg.

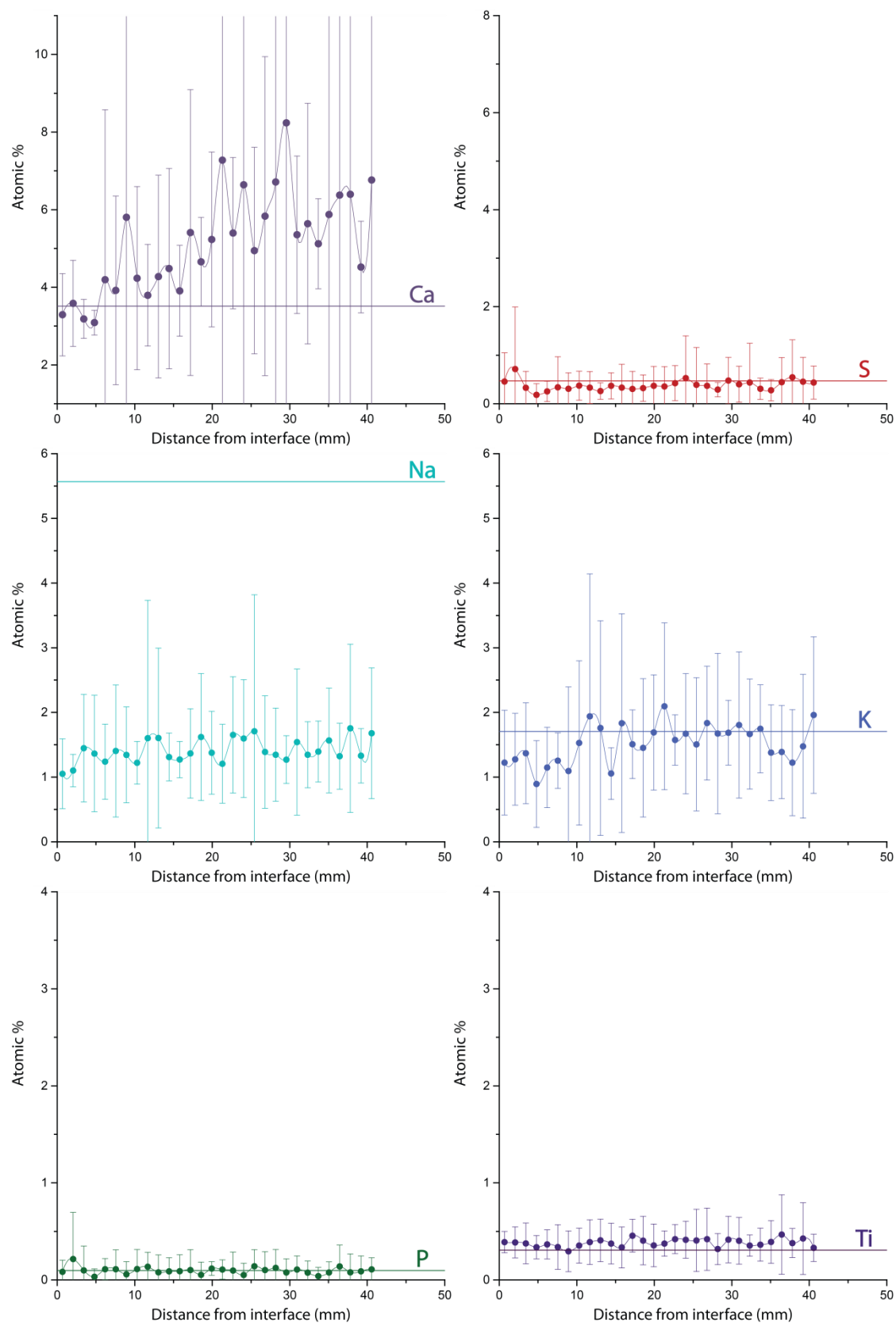


Fig. S1-6 Chemical profiles of minor elements Ca, S, Na, K, P and Ti.

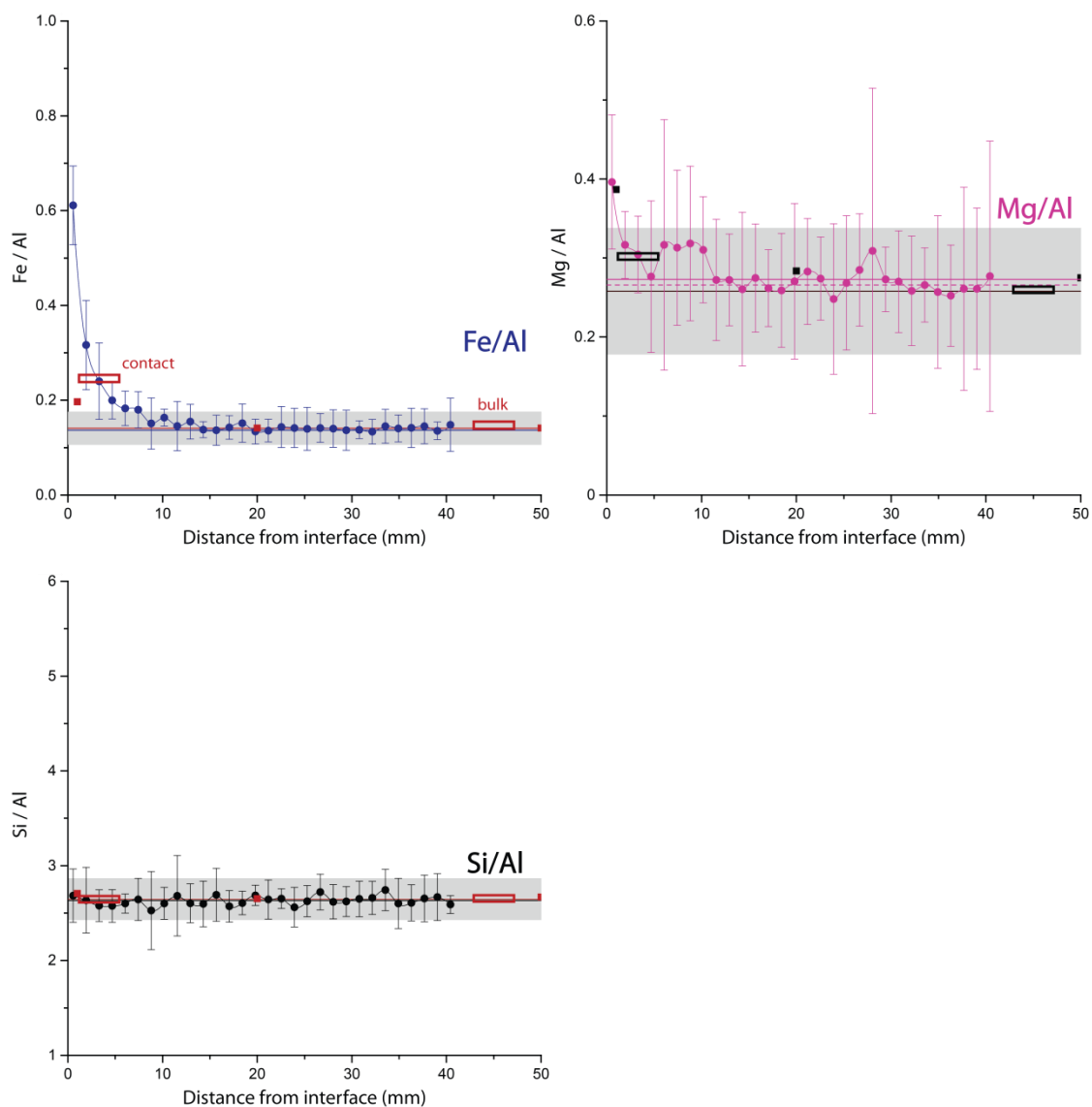


Fig. S1-7 Al-normalized chemical profiles of major elements Fe, Mg and Si. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm). Empty rectangles represent present XRF measurements on powdered ABM2 samples (bulk sample at 45 mm and contact sample at 3 mm).

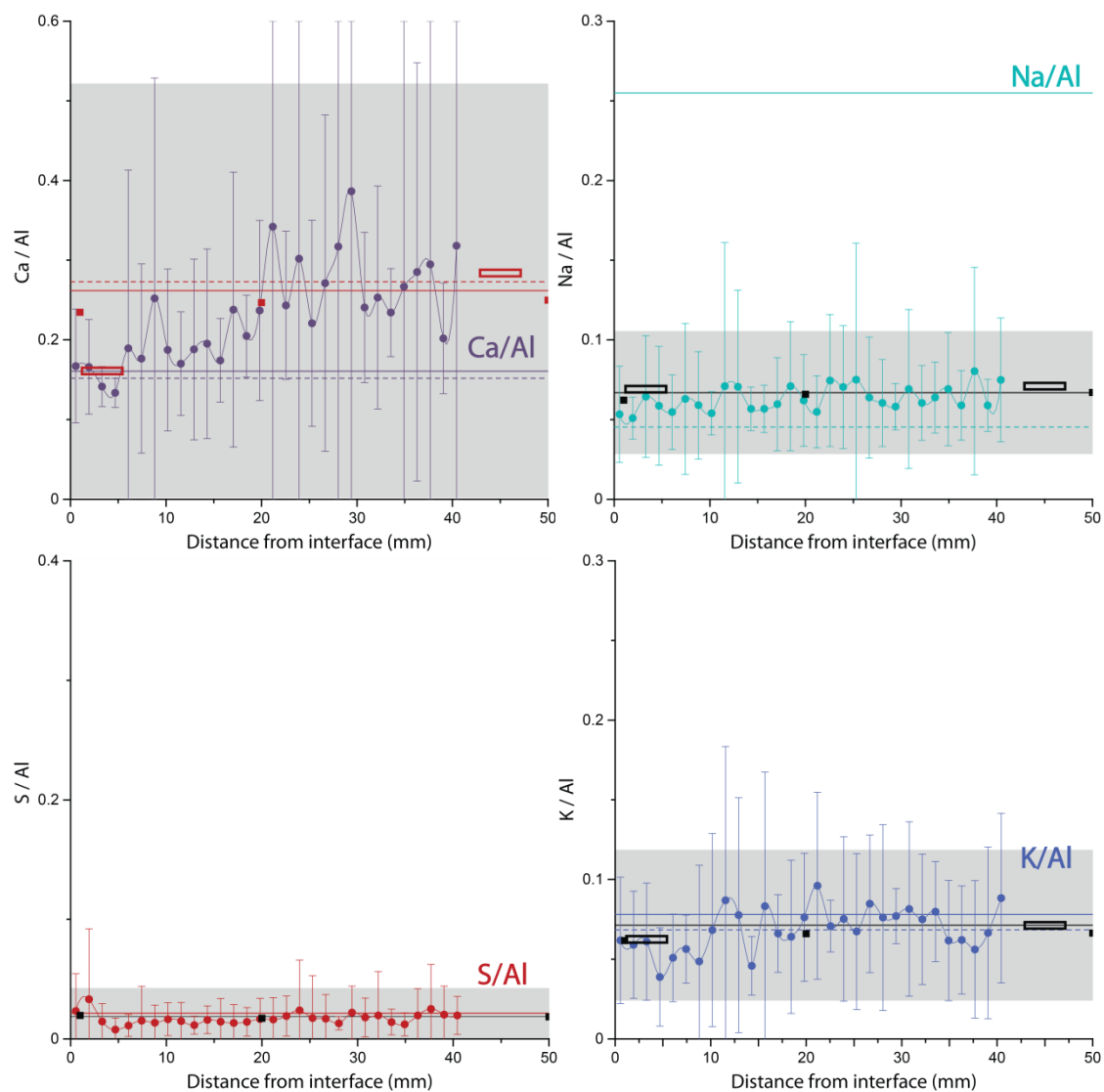


Fig. S1-8 Al-normalized chemical profiles of minor elements Ca, Na, K and S. Solid squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm). Empty rectangles represent XRF data on powdered samples (bulk sample at 45 mm and contact sample at 3 mm).

S1-3: ABM2 block#12 - Iksorb IKO03

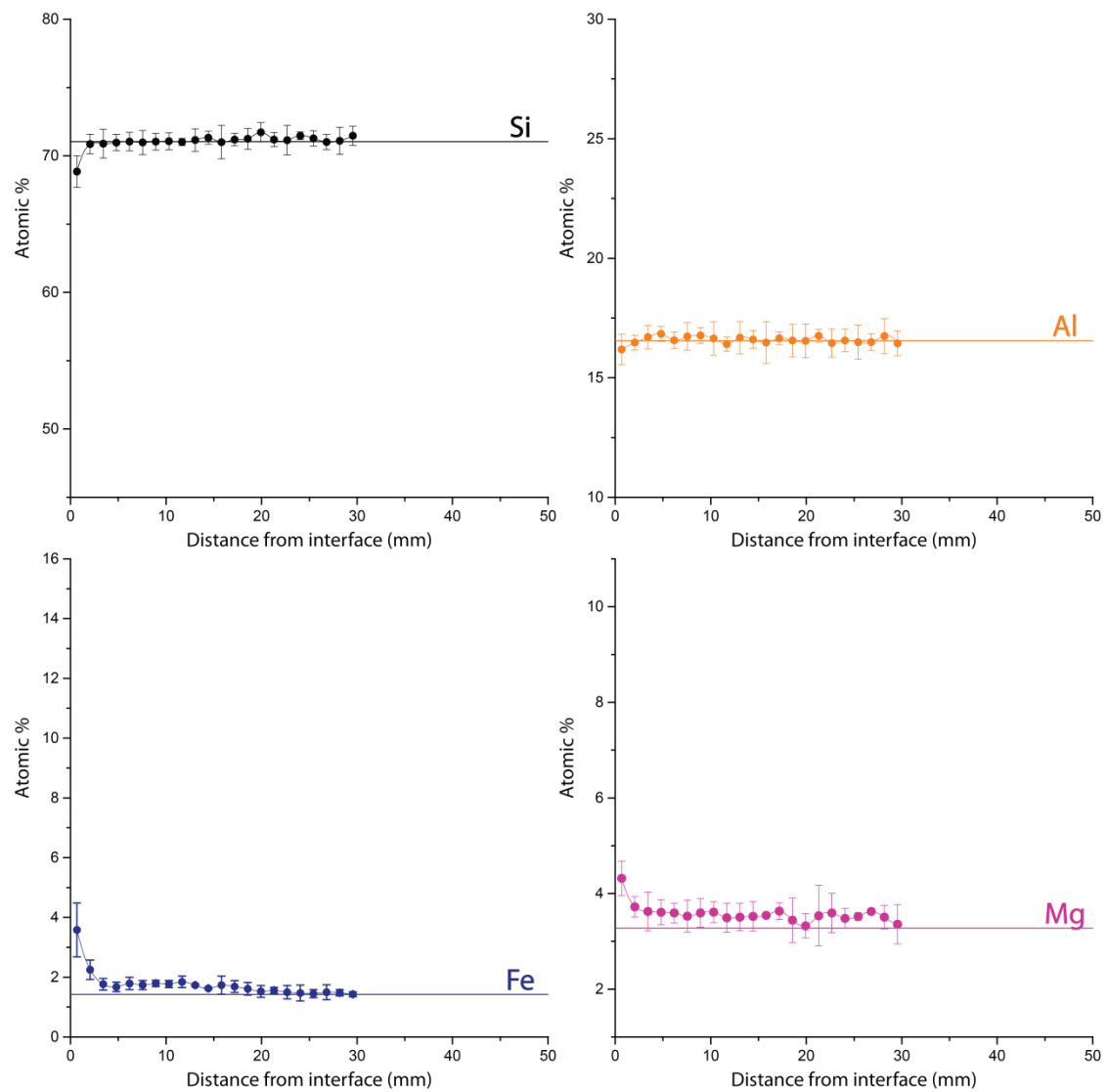


Fig. S1-9 Chemical profiles of major elements Si, Al, Fe and Mg.

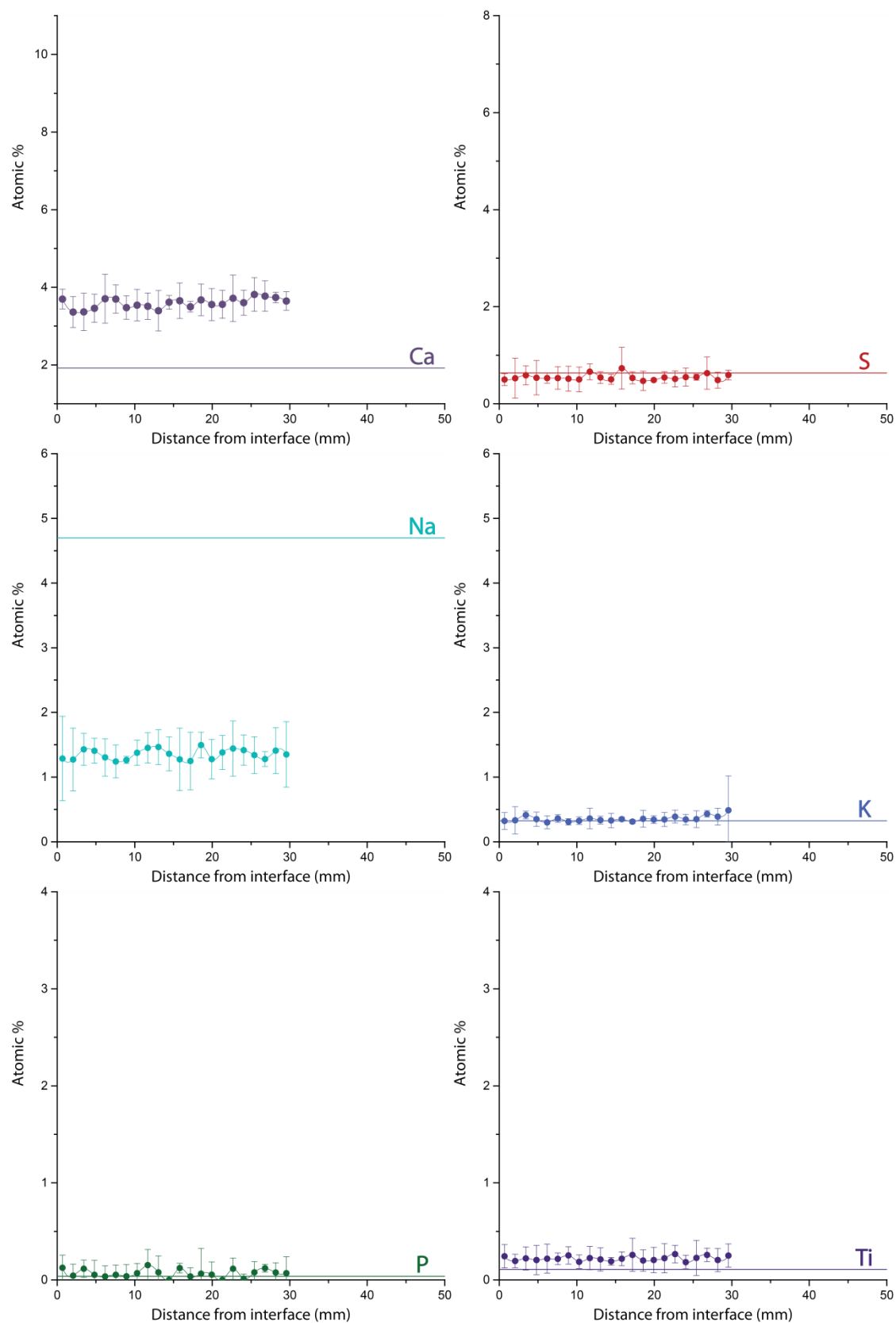


Fig. S1-10 Chemical profiles of minor elements Ca, S, Na, K, P and Ti.

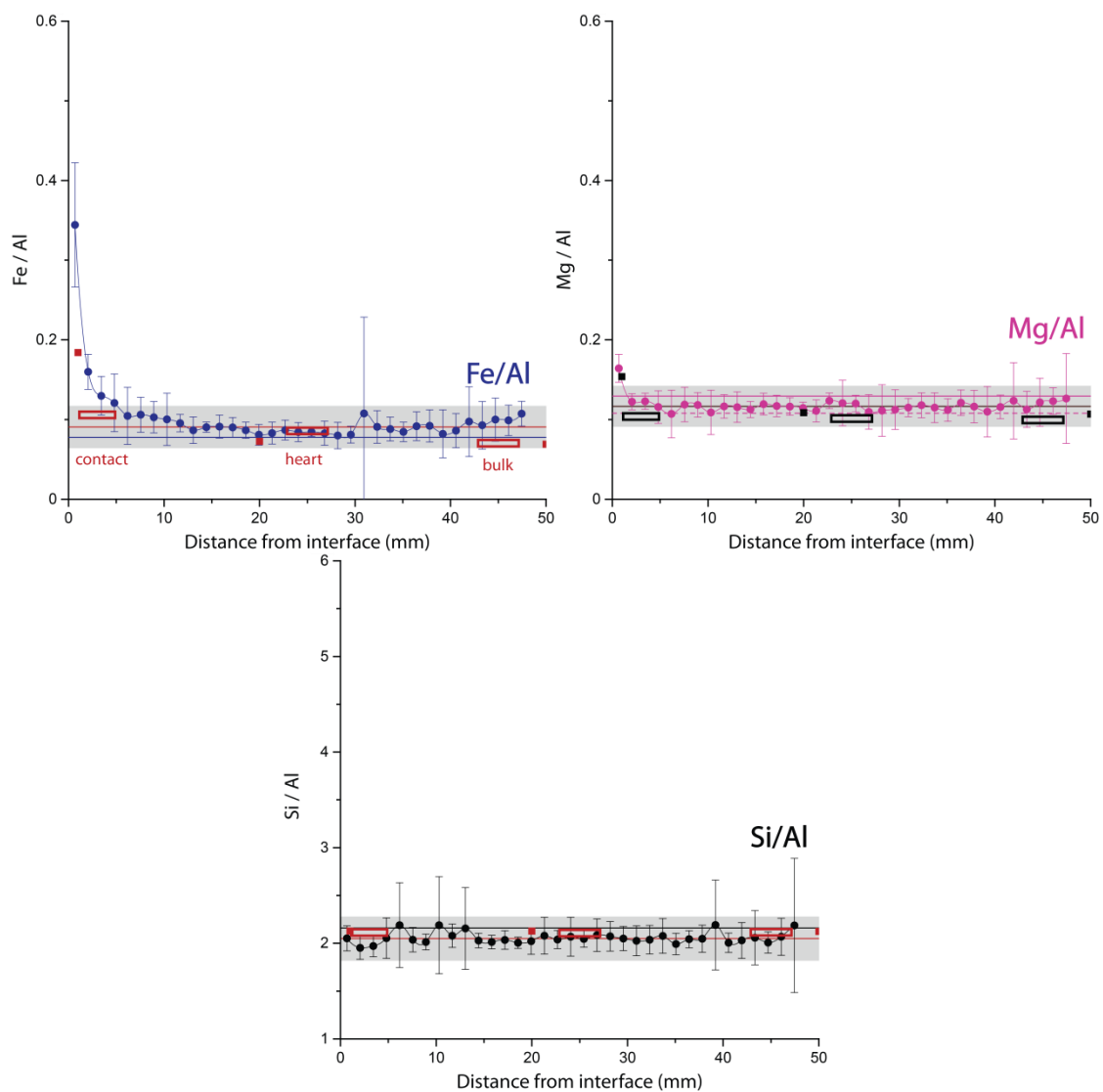


Fig. S1-11 Al-normalized chemical profiles of major elements Fe, Mg and Si. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm).

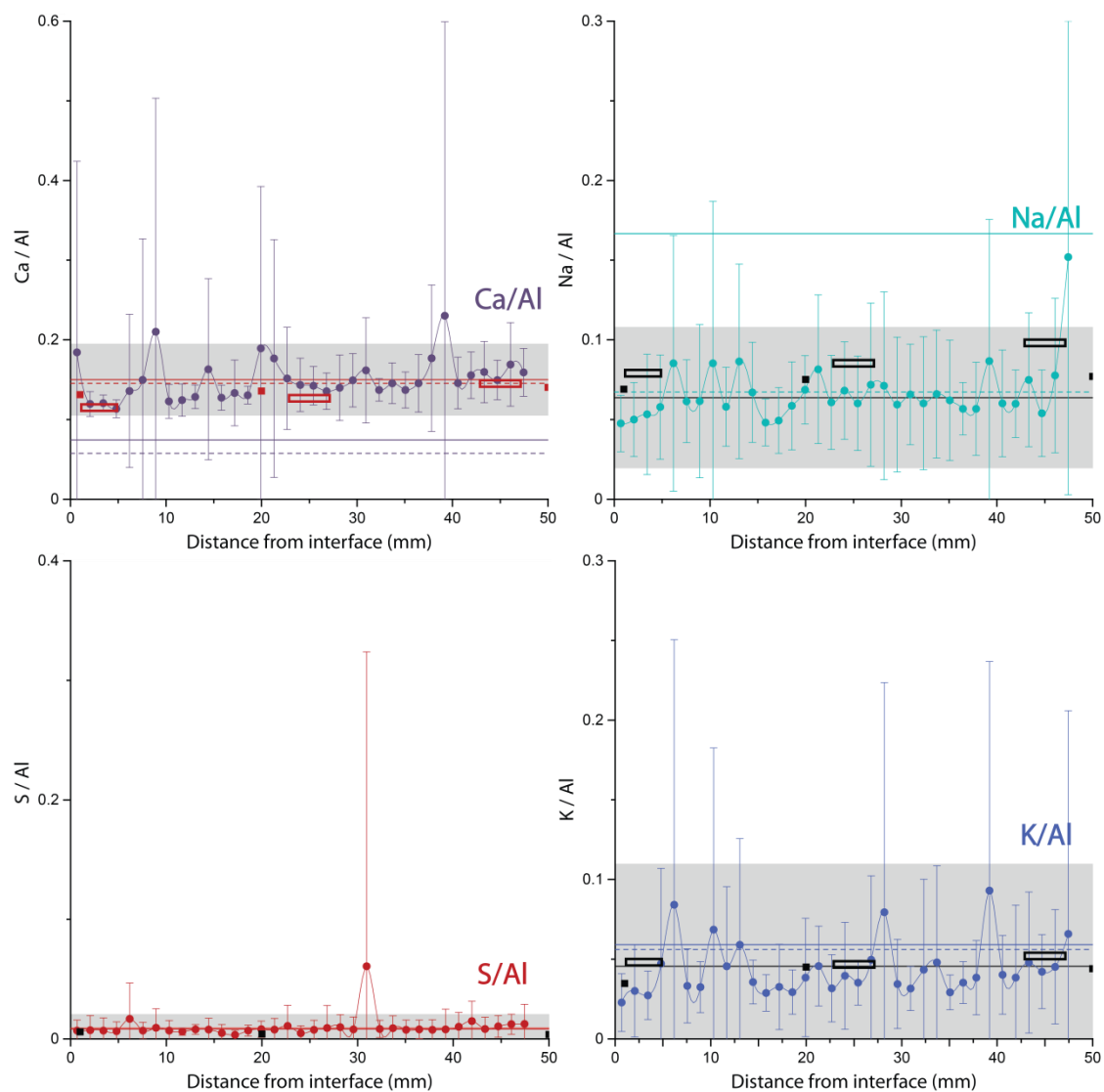


Fig. S1-12 Al-normalized chemical profiles of minor elements Ca, Na, K and S. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm).

S1-4: ABM2 #13 - Kunigel V1 JNB03

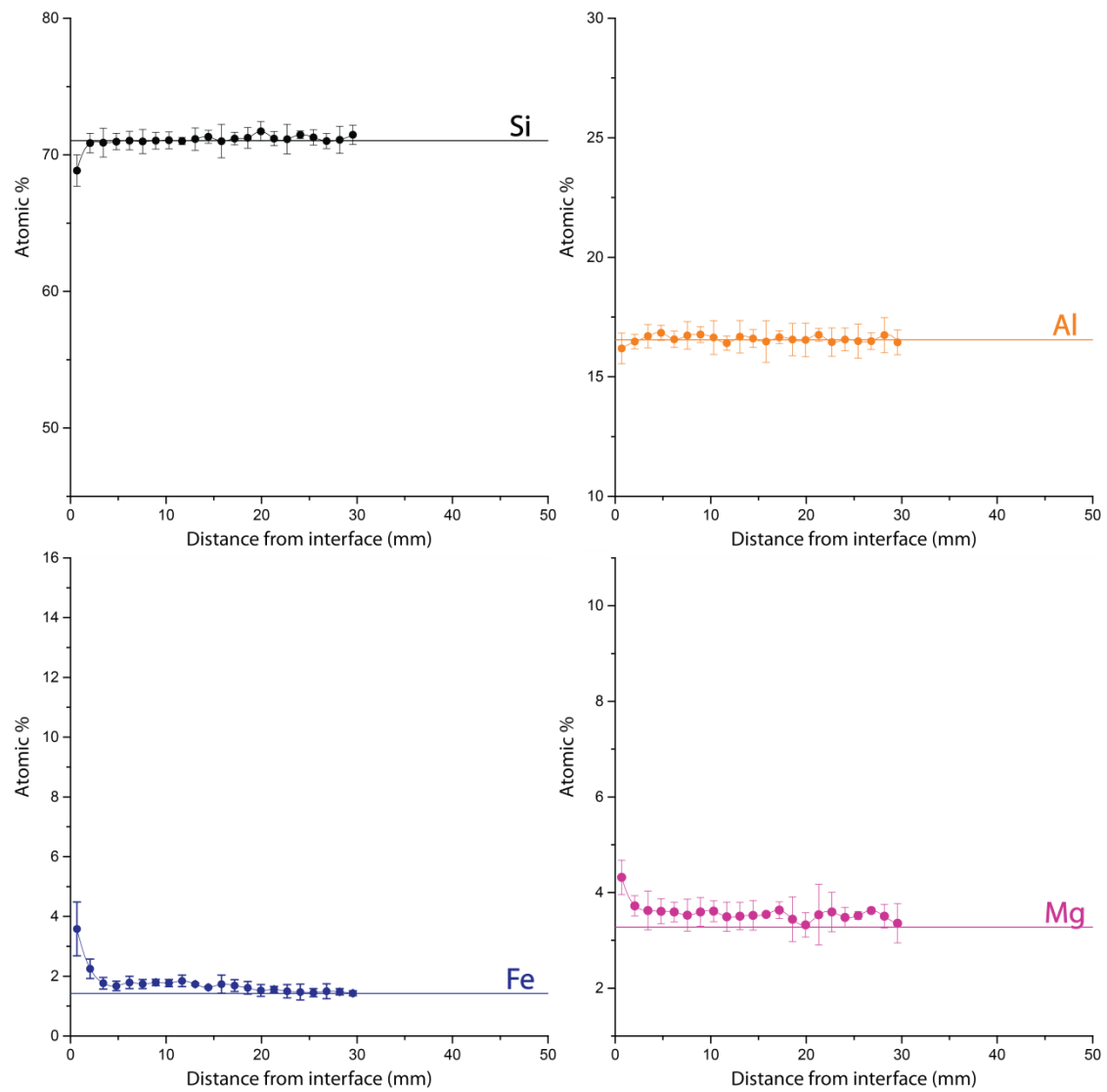


Fig. A-40 Chemical profiles of major elements Si, Al, Fe and Mg.

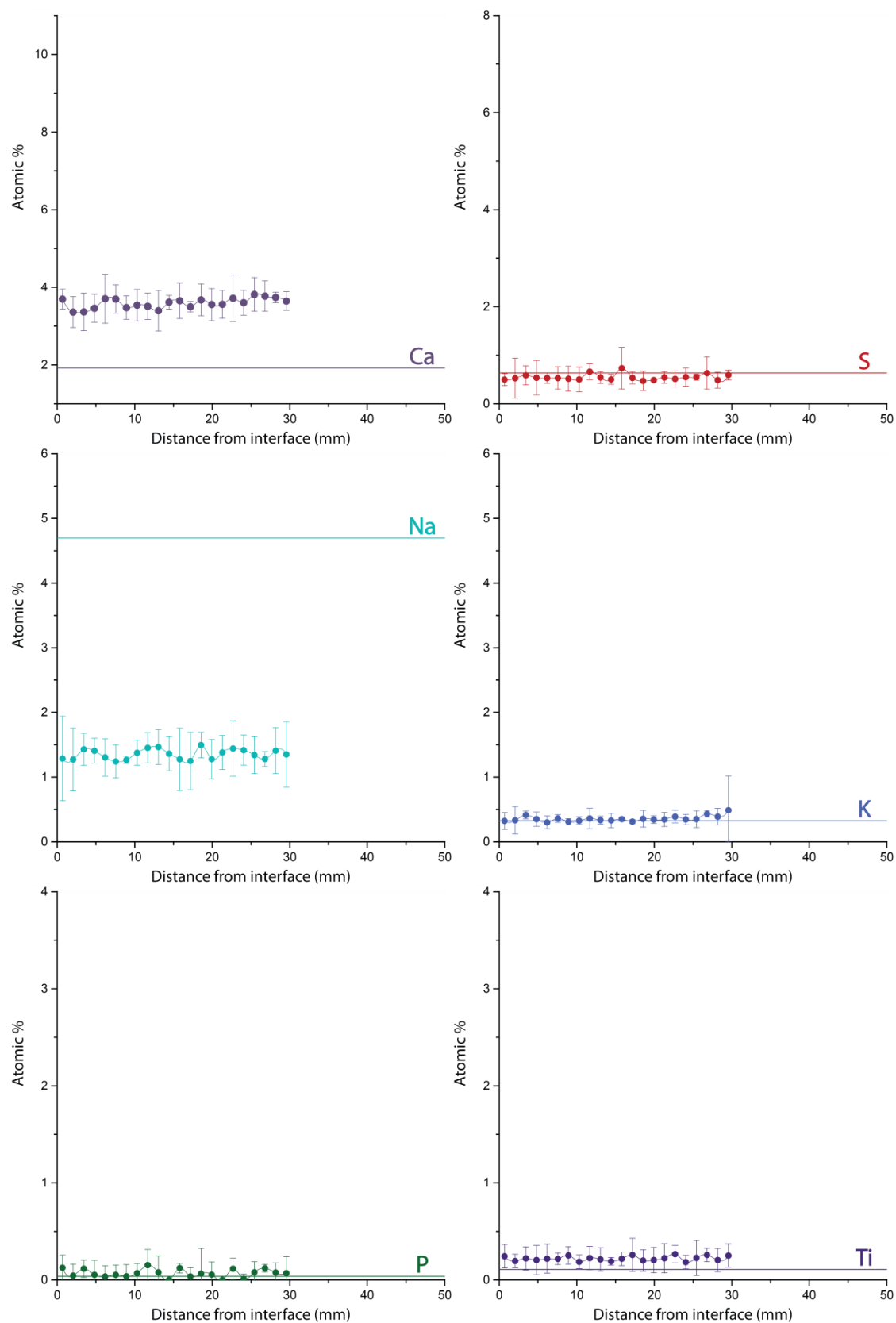


Fig. A-41 Chemical profiles of minor elements Ca, S, Na, K, P and Ti.

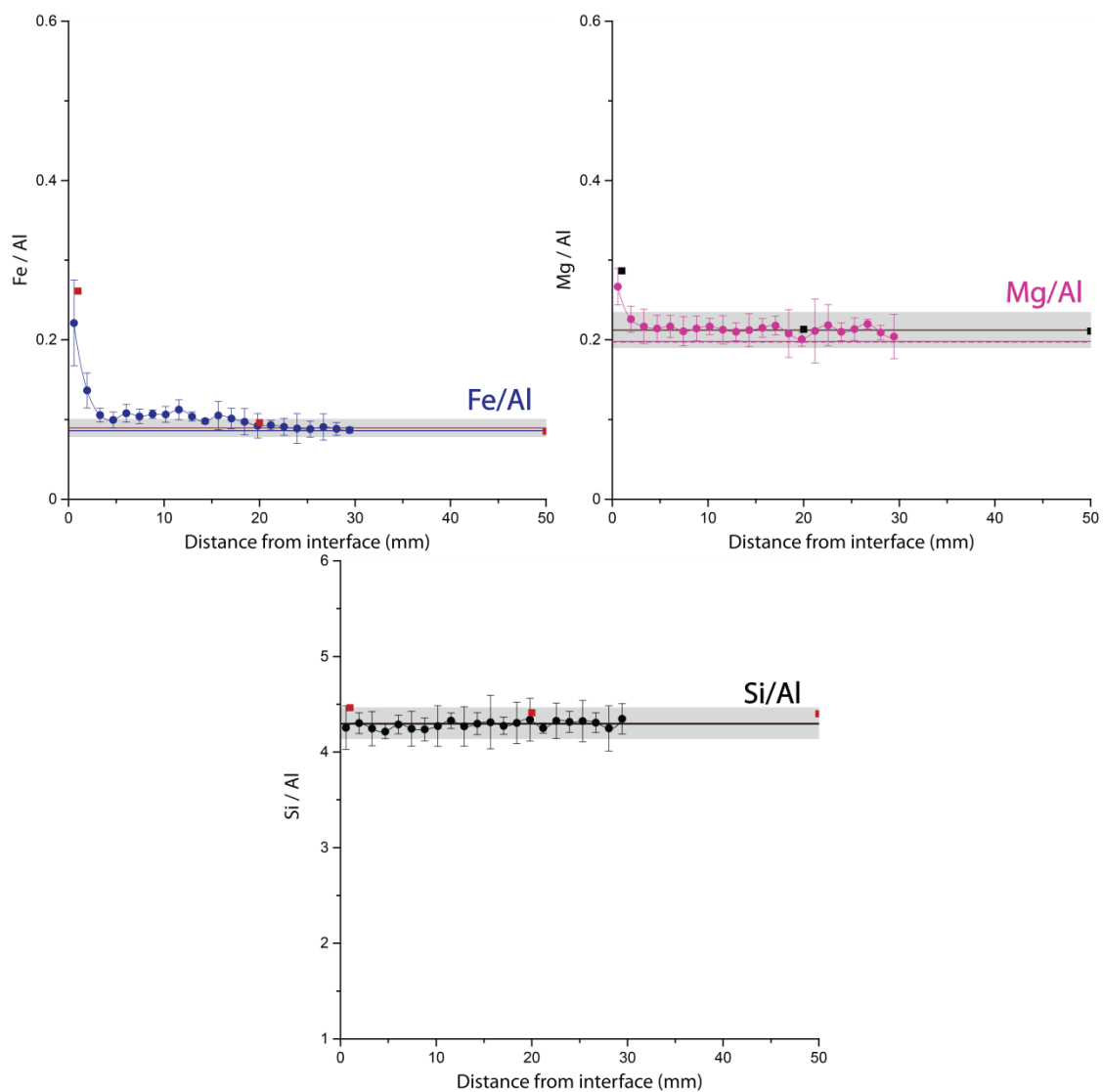


Fig. S1-13 Al-normalized chemical profiles of major elements Fe, Mg and Si. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm).

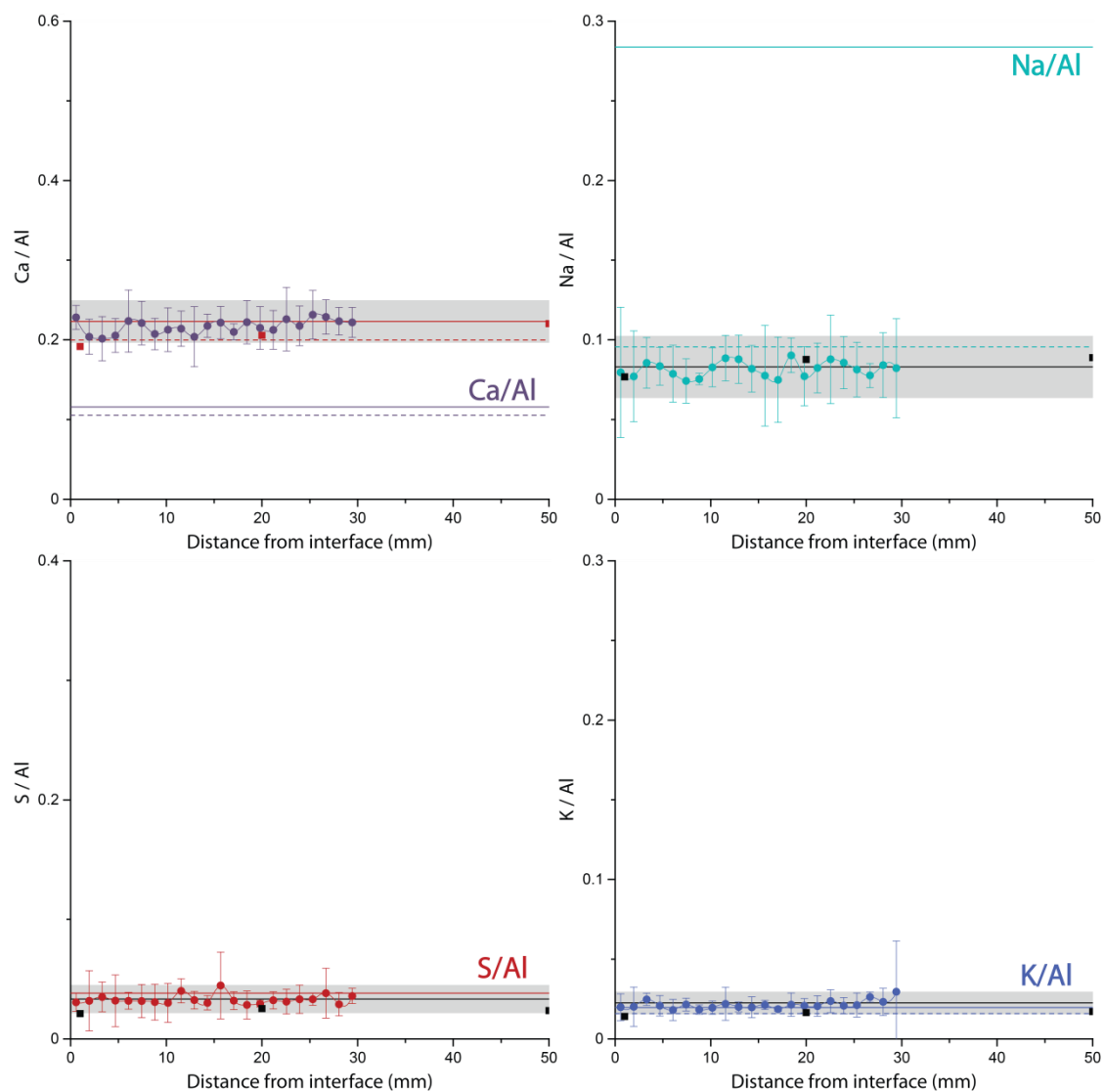


Fig. S1-14 Al-normalized chemical profiles of minor elements Ca, Na, K and S. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm).

S1-5: ABM2 #24 – Røkle ROK4

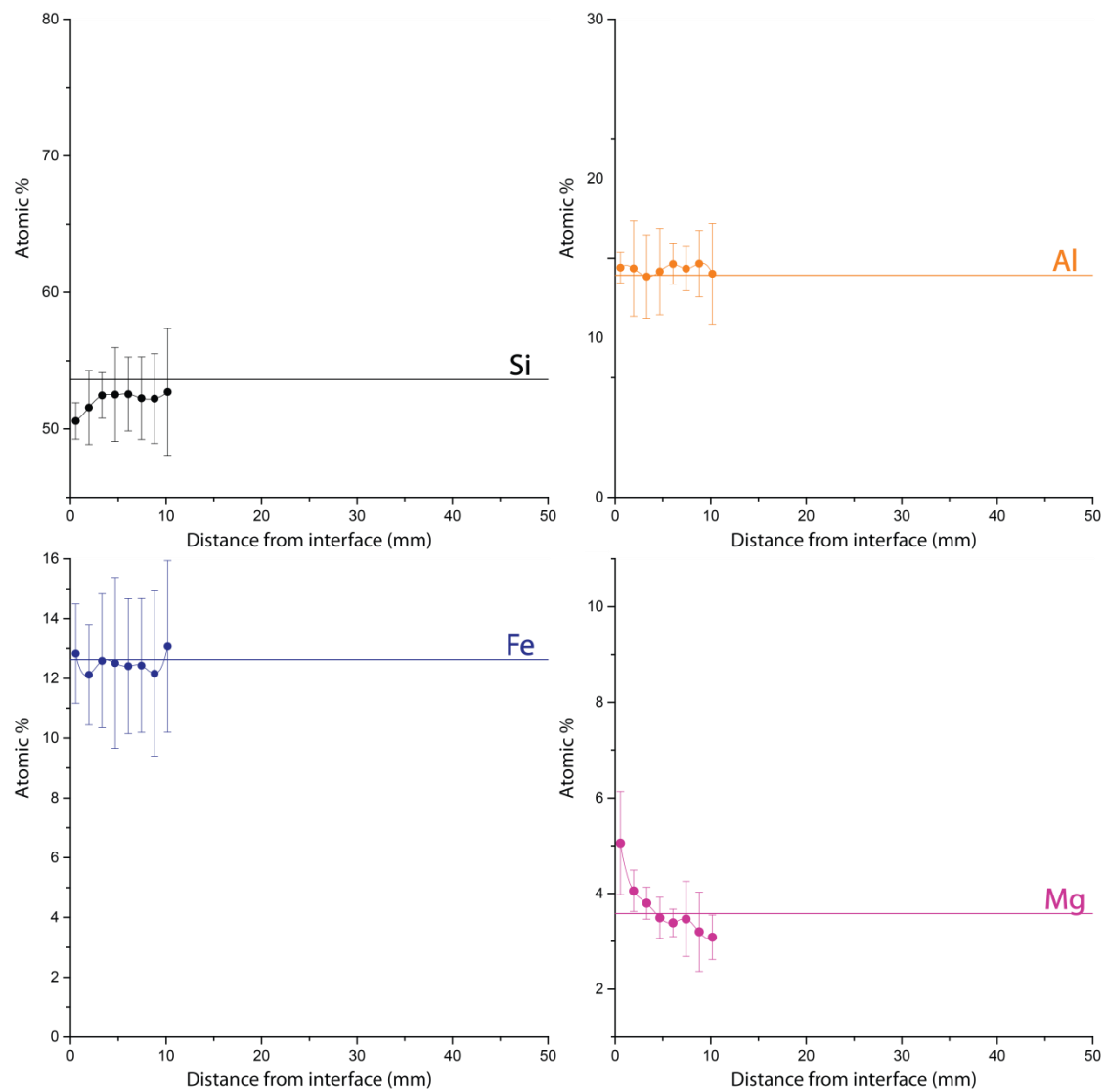


Fig. S1-15 Chemical profiles of major elements Si, Al, Fe and Mg.

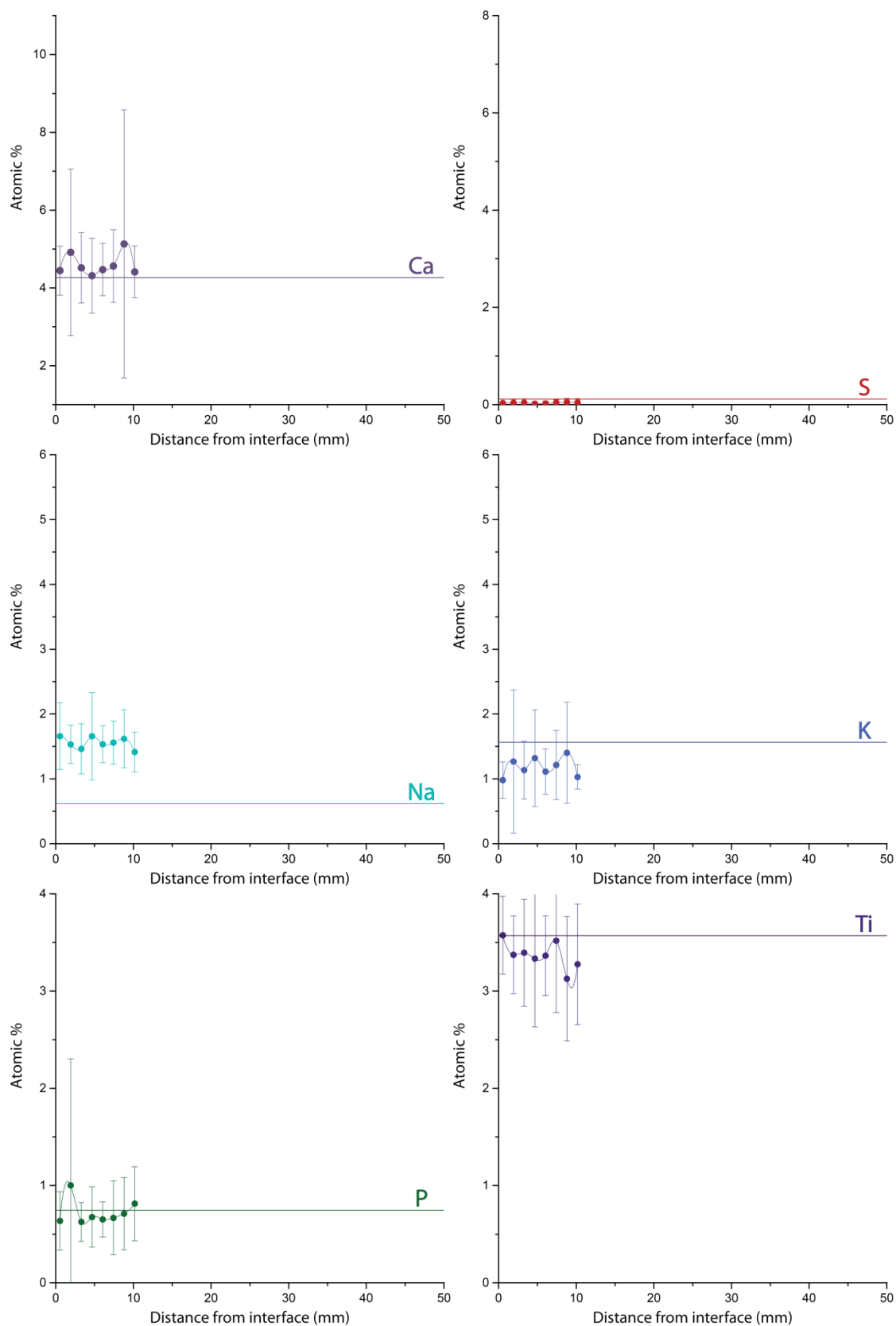


Fig. S1-16 Chemical profiles of minor elements Ca, S, Na, K, P and Ti.

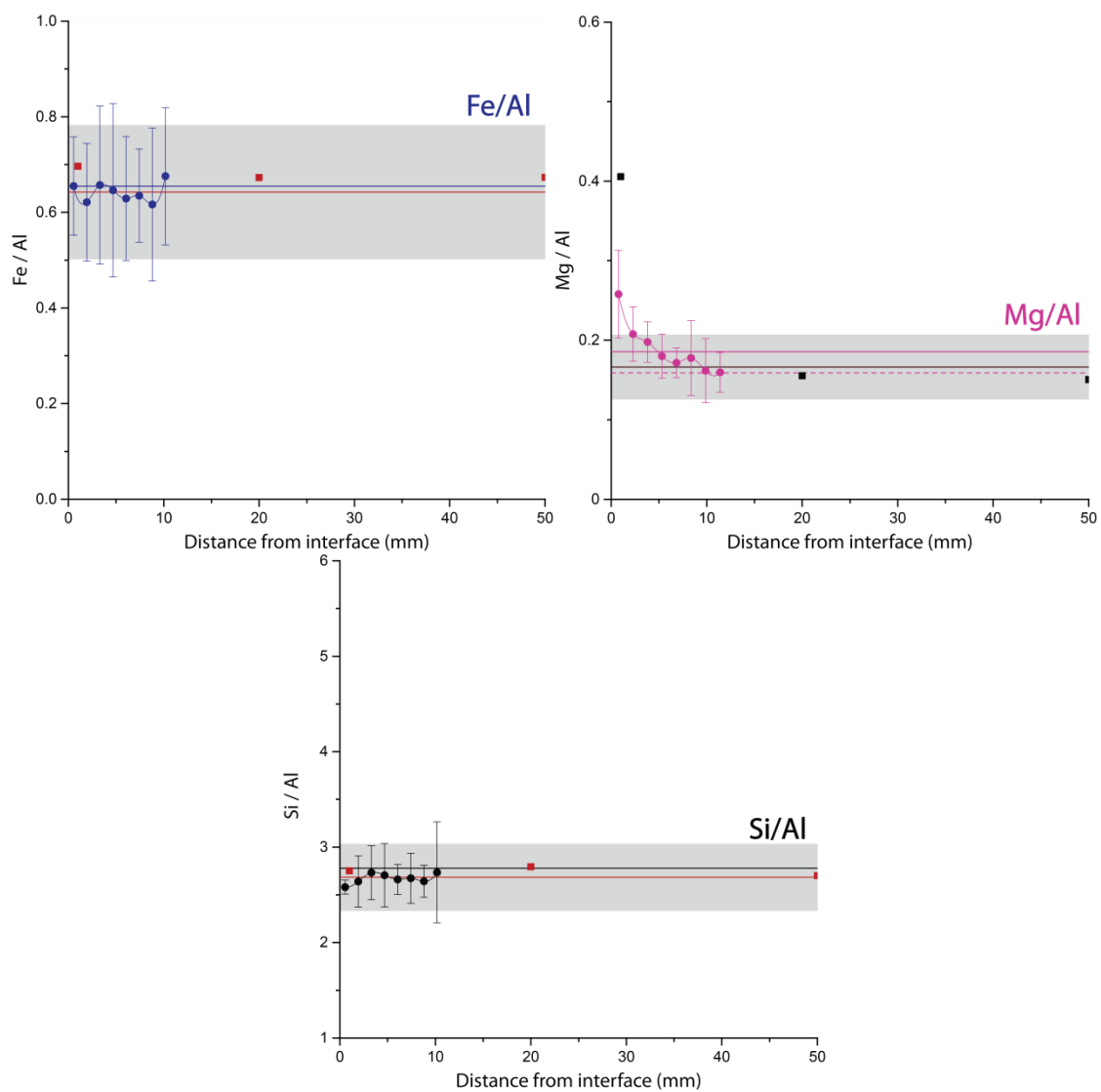


Fig. S1-17 Al-normalized chemical profiles of major elements Fe, Mg and Si. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm).

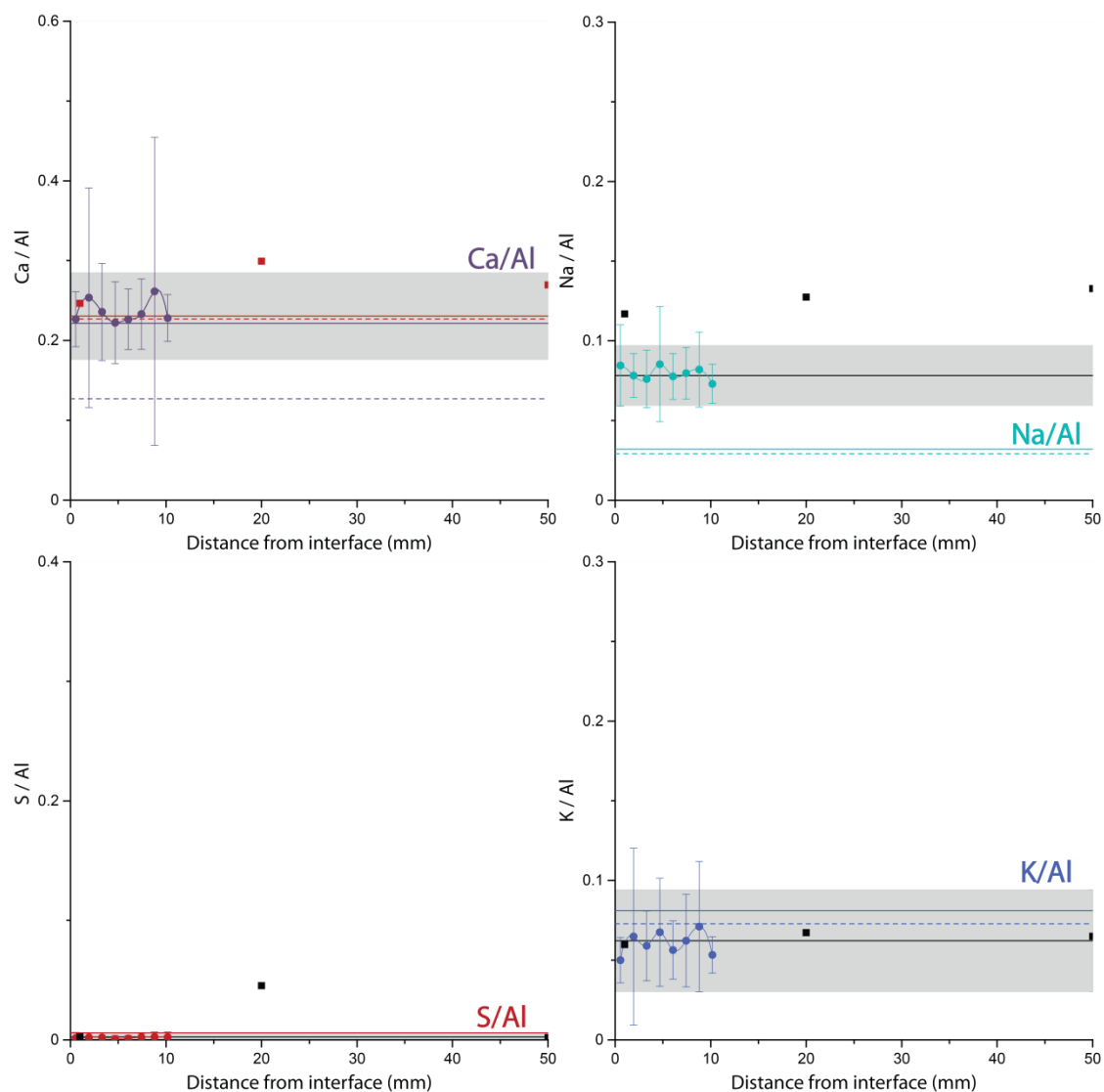


Fig. S1-18 Al-normalized chemical profiles of minor elements Ca, Na, K and S. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm).

S1-6: ABM2 #25 – MX80 granulate +quartz

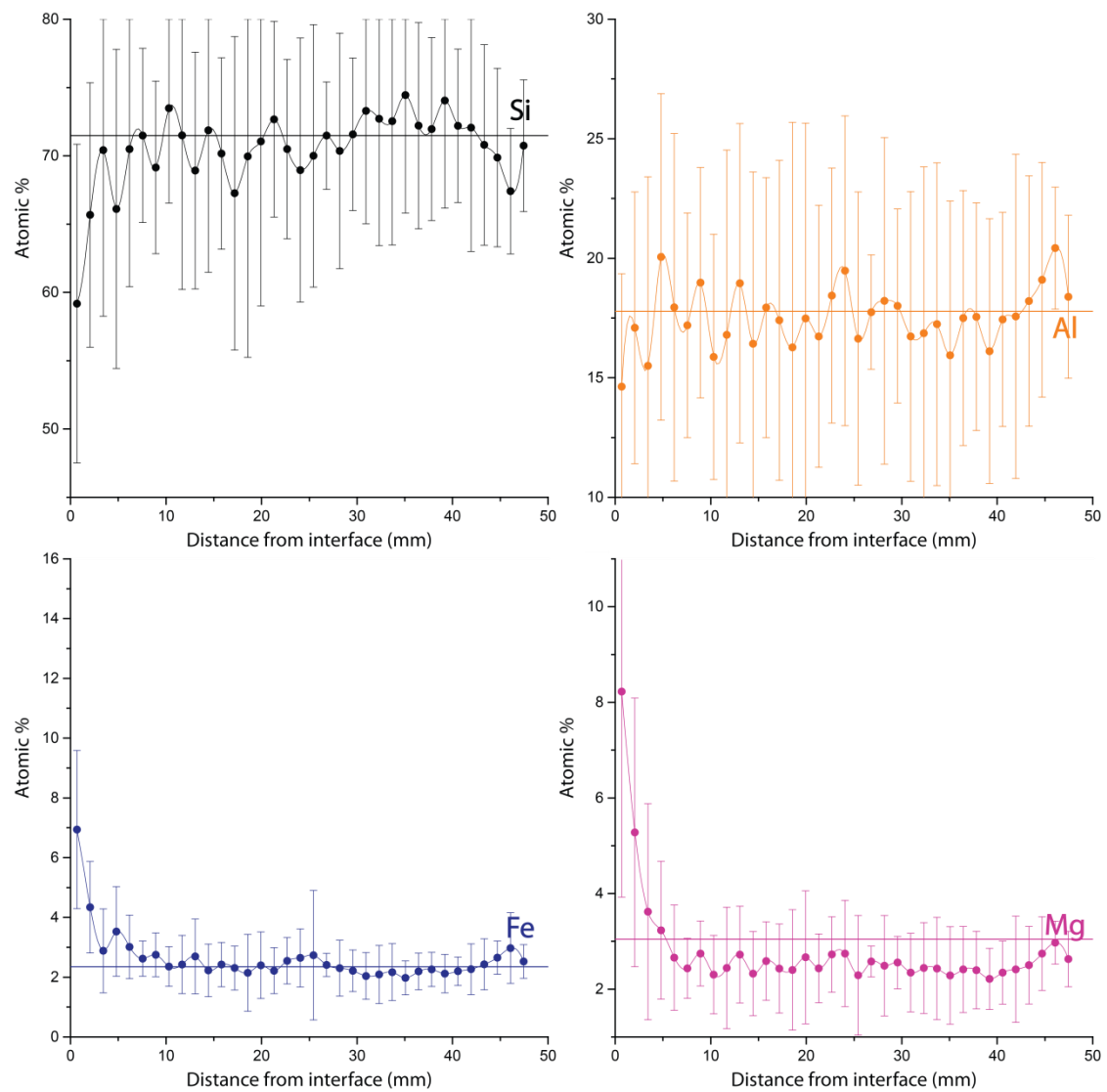


Fig. S1-19 Chemical profiles of major elements Si, Al, Fe and Mg.

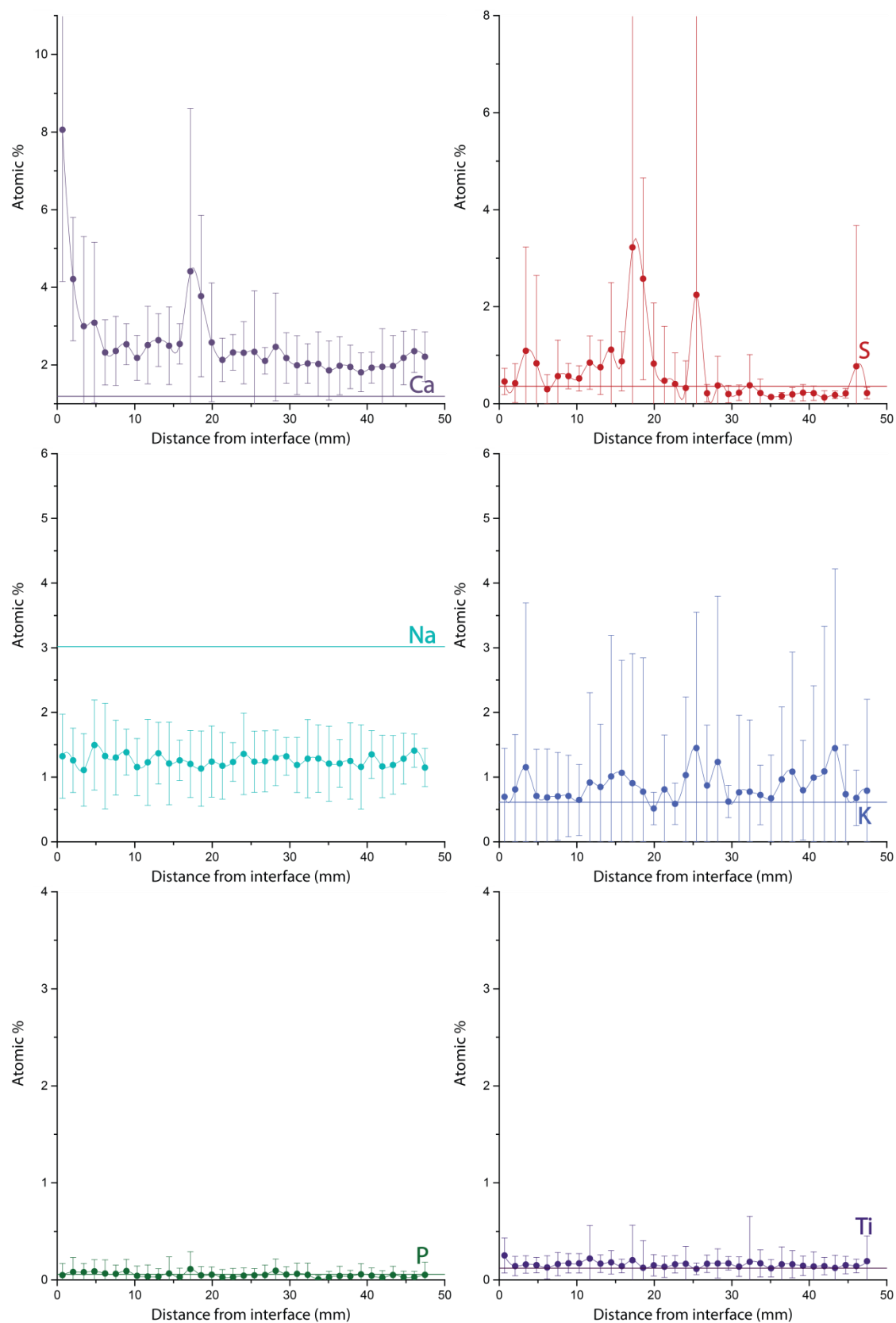


Fig. S1-20 Chemical profiles of minor elements Ca, S, Na, K, P and Ti.

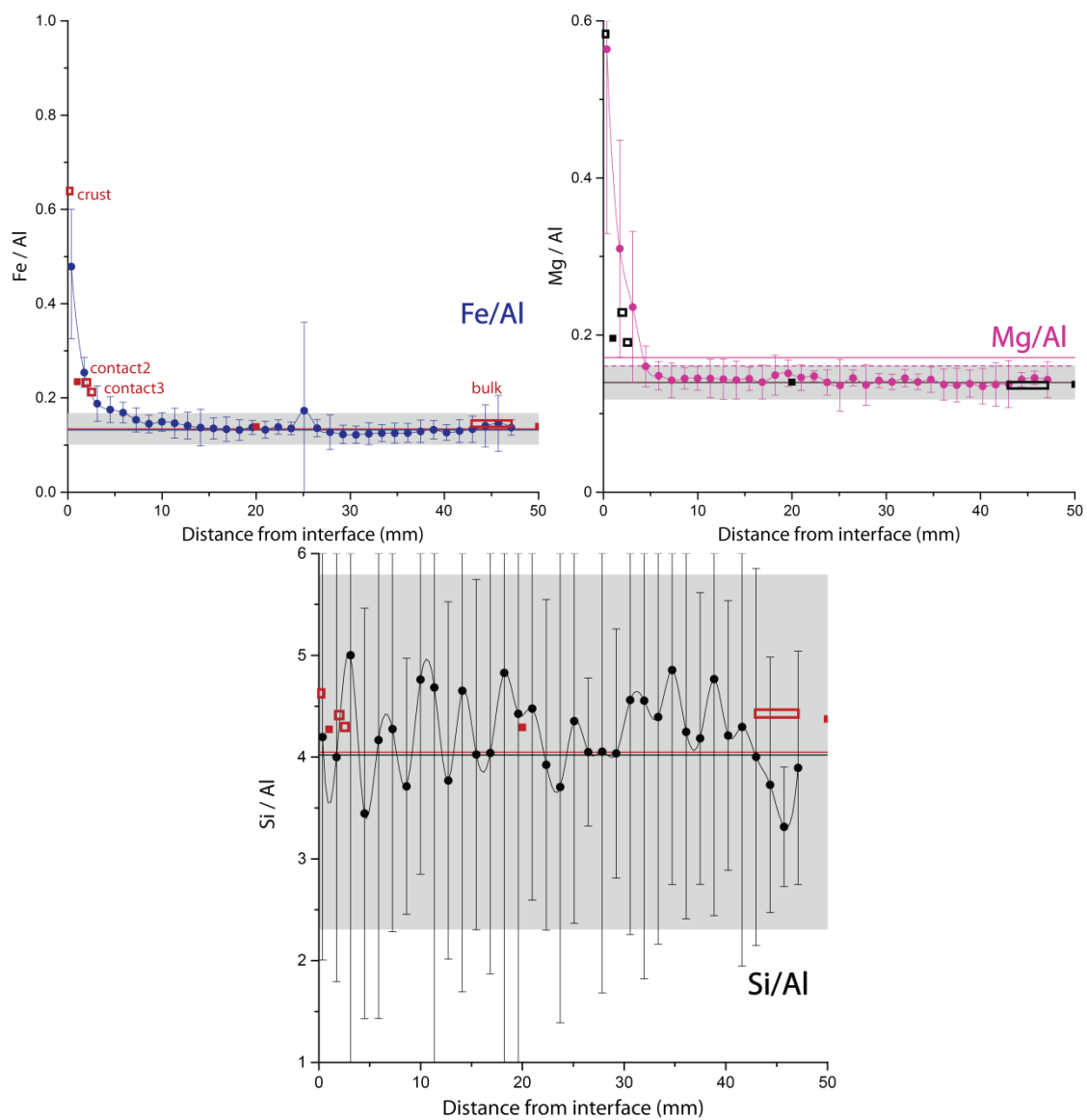


Fig. S1-21 Al-normalized chemical profiles of major elements Fe, Mg and Si. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm). Empty rectangles represent present XRF measurements on powdered ABM2 samples (bulk sample at 45 mm, contact-3 at 3 mm, contact-2 at 1 mm, and crust at 0.25 mm).

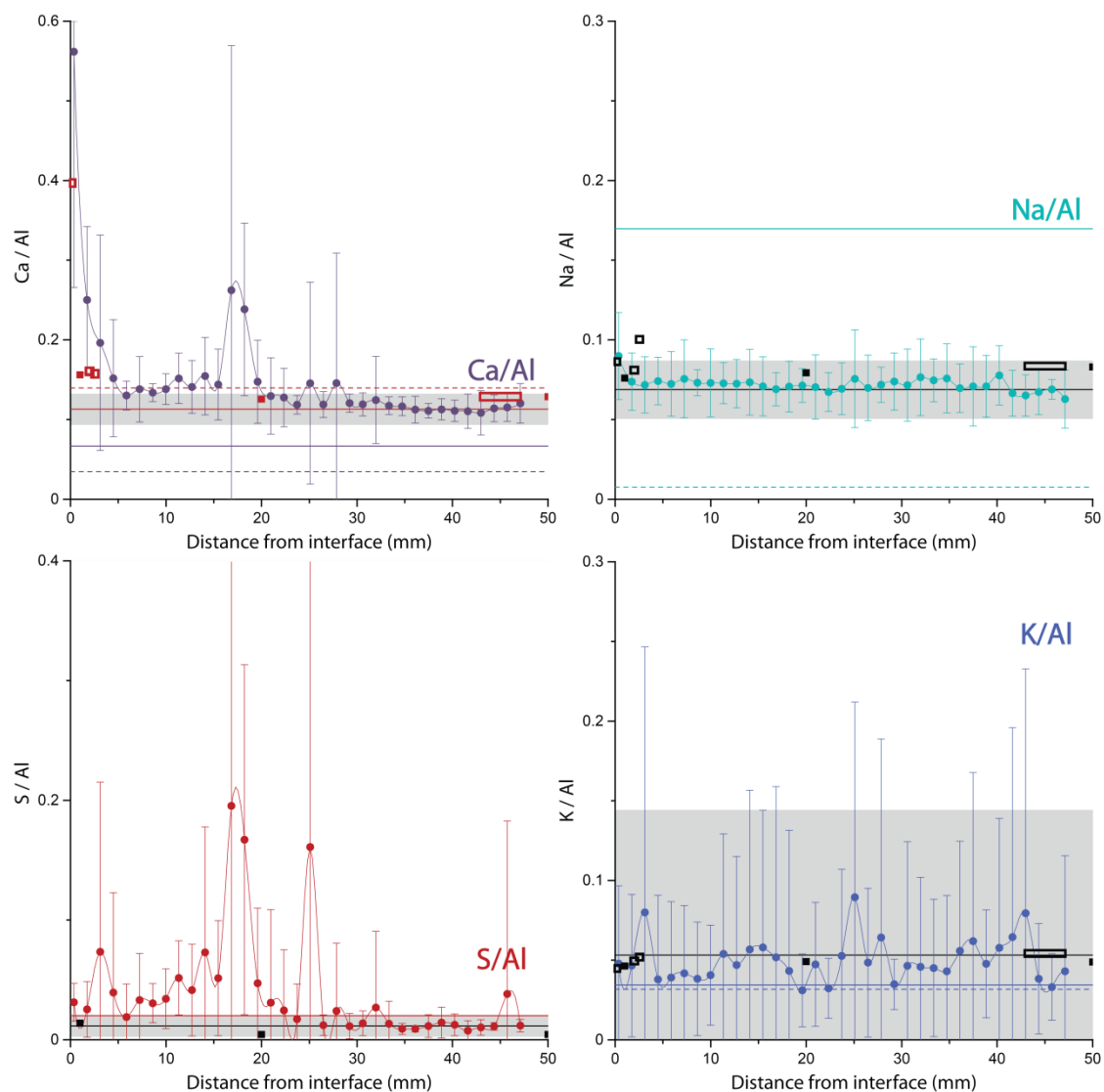


Fig. S1-22 Al-normalized chemical profiles of minor elements Ca, Na, K and S. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm). Empty rectangles represent present XRF measurements on powdered ABM2 samples (bulk sample at 45 mm, contact-3 at 3 mm, contact-2 at 1 mm, and crust at 0.25 mm).

S1-7: ABM2 #26 – Deponit CAN4

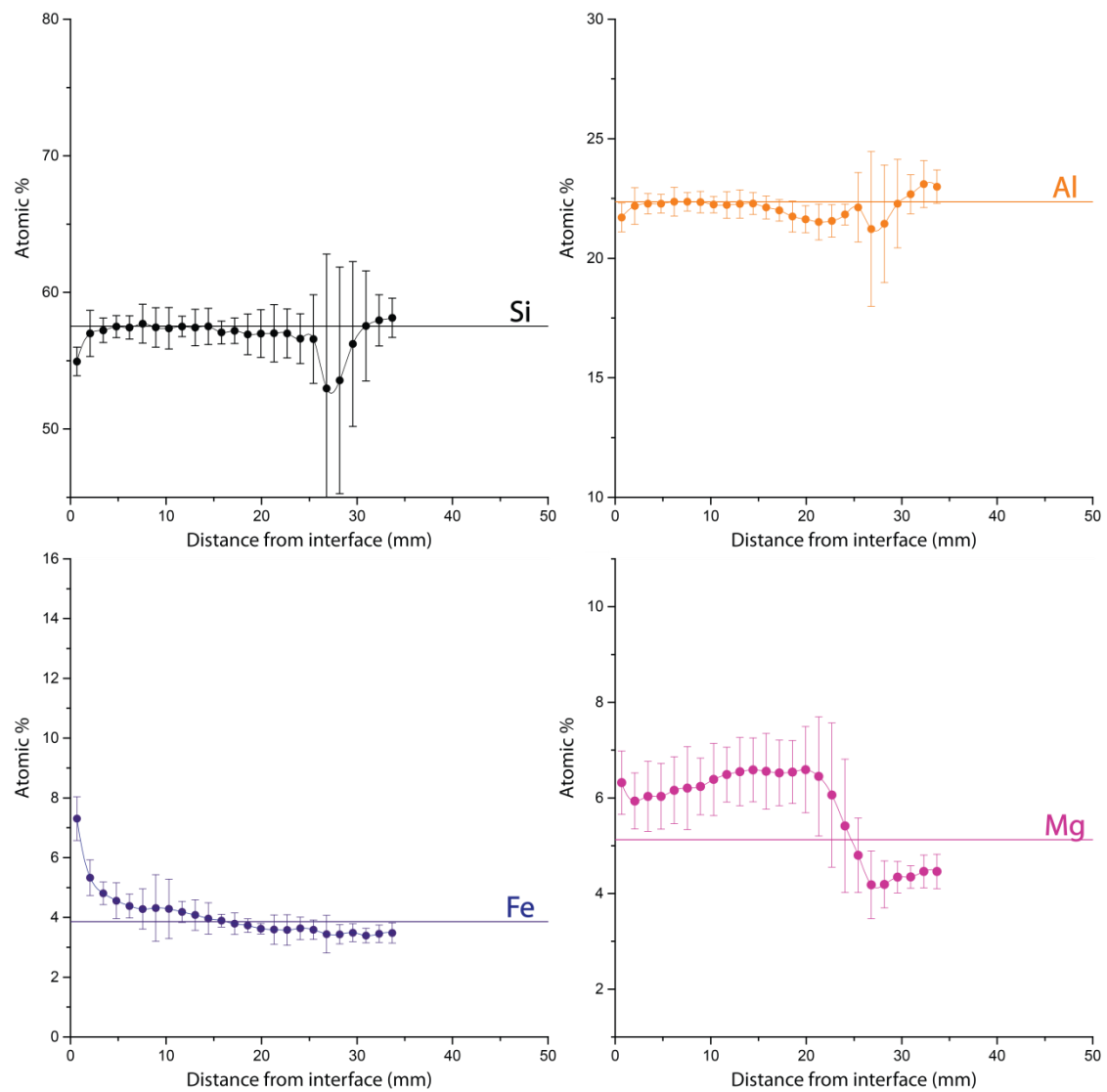


Fig. S1-23 Chemical profiles of major elements Si, Al, Fe and Mg.

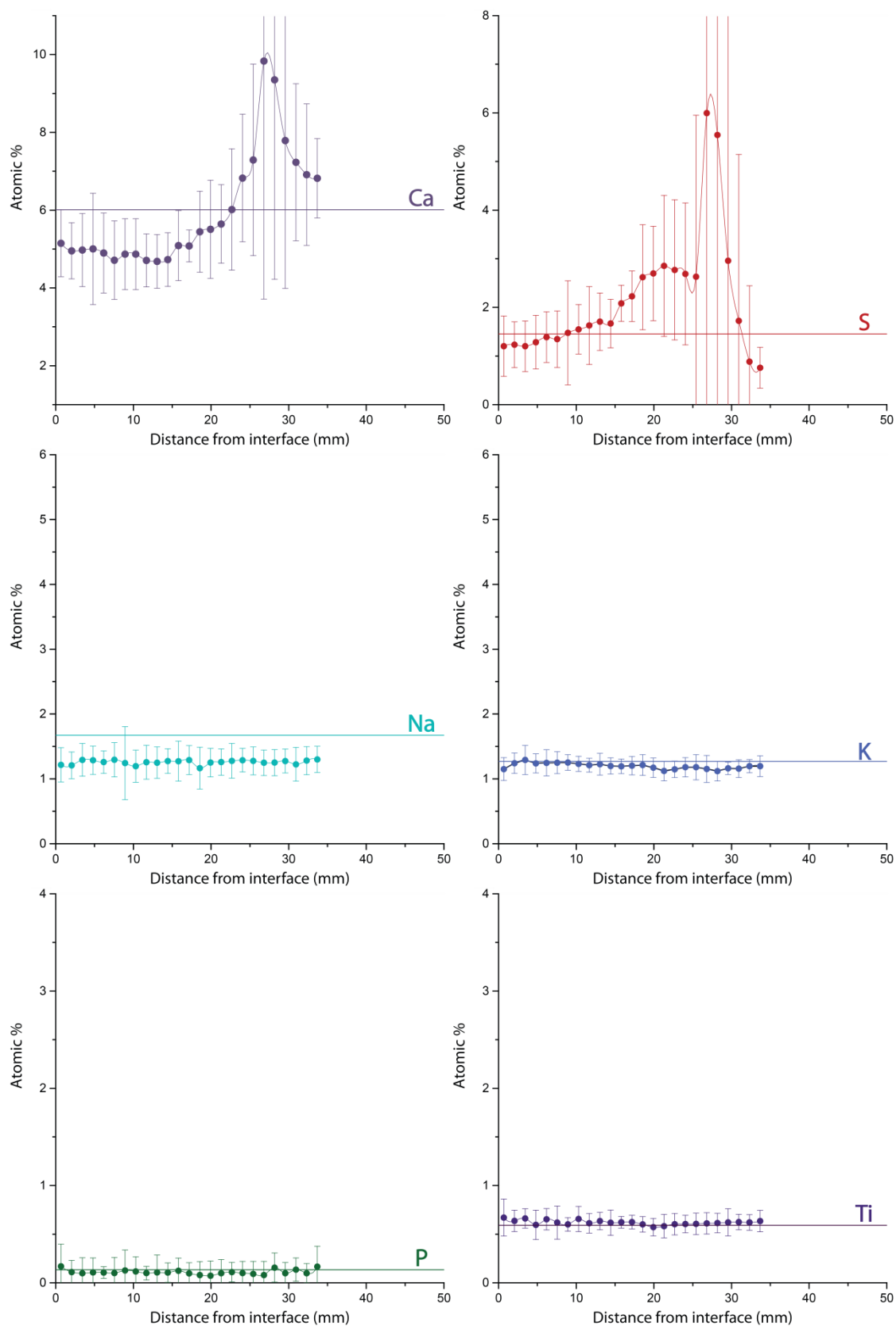


Fig. S1-24 Chemical profiles of minor elements Ca, S, Na, K, P and Ti

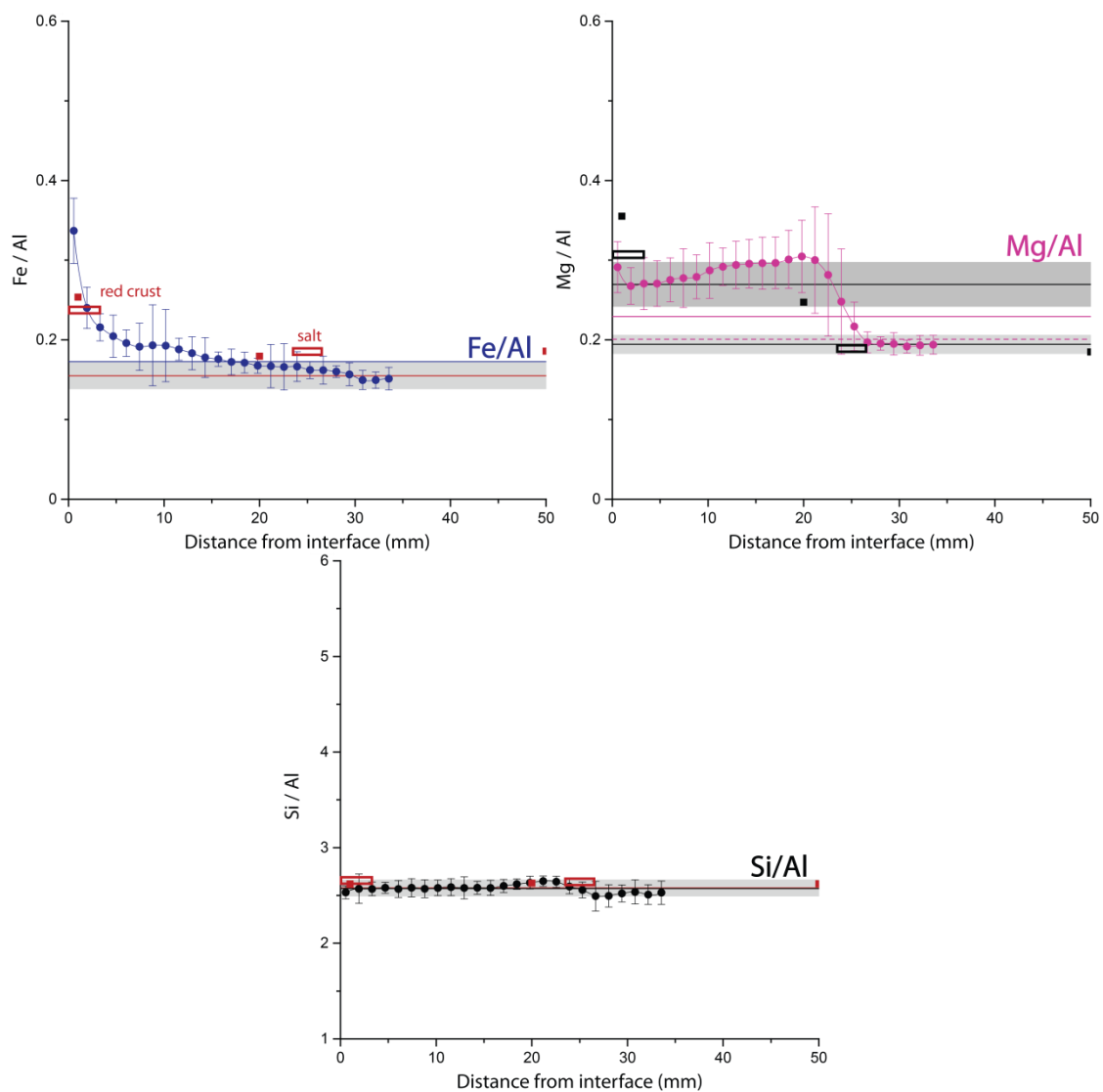


Fig. S1-25 Al-normalized chemical profiles of major elements Fe, Mg and Si. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm). Empty rectangles represent present XRF measurements on powdered ABM2 samples (red crust sample at 0-3 mm and salt sample at 25 mm).

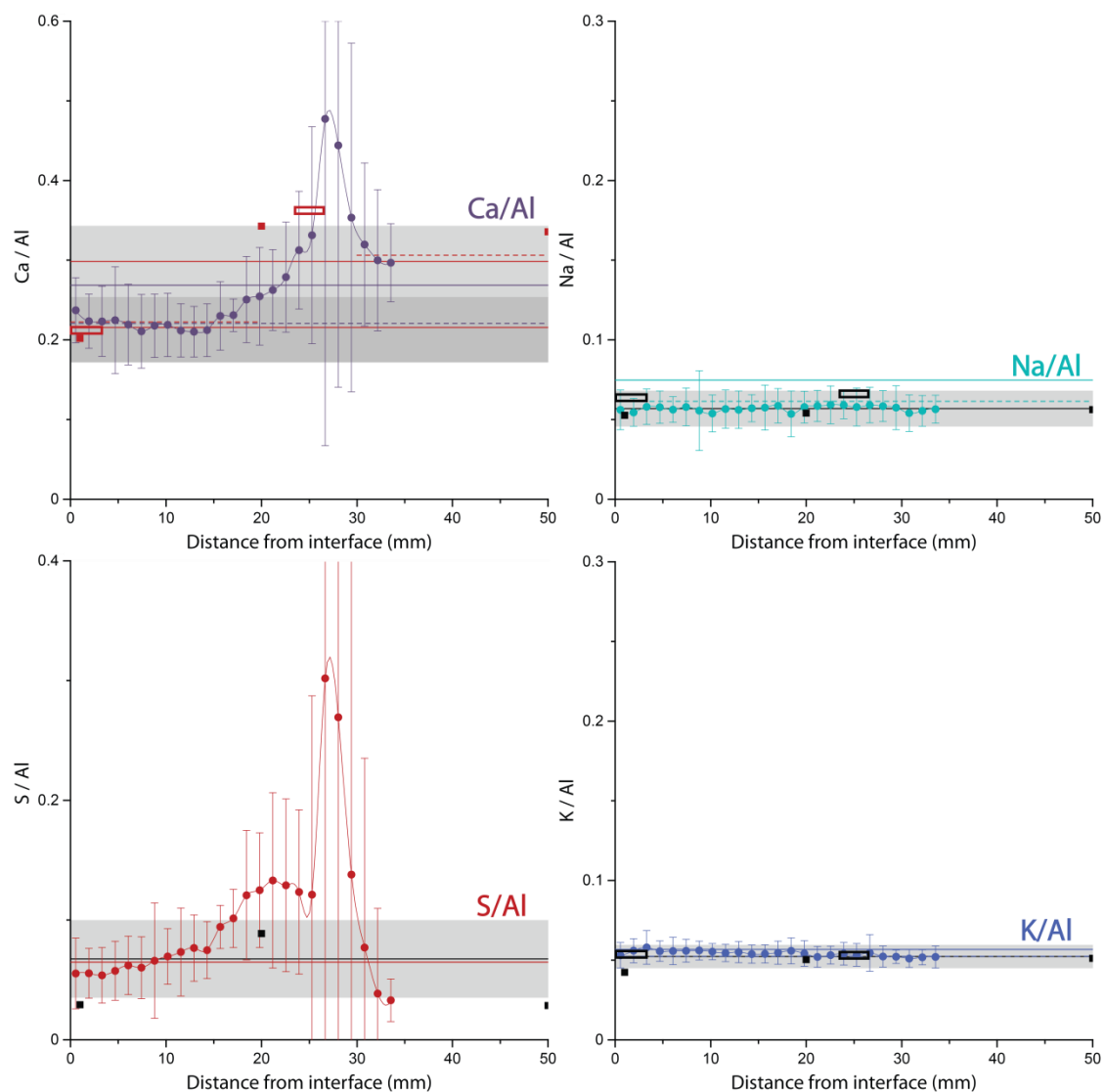


Fig. S1-26 Al-normalized chemical profiles of minor elements Ca, Na, K and S. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm). Empty rectangles represent present XRF measurements on powdered ABM2 samples (red crust sample at 0-3 mm and salt sample at 25 mm).

S1-8: ABM2 #27 – MX80 Granulate

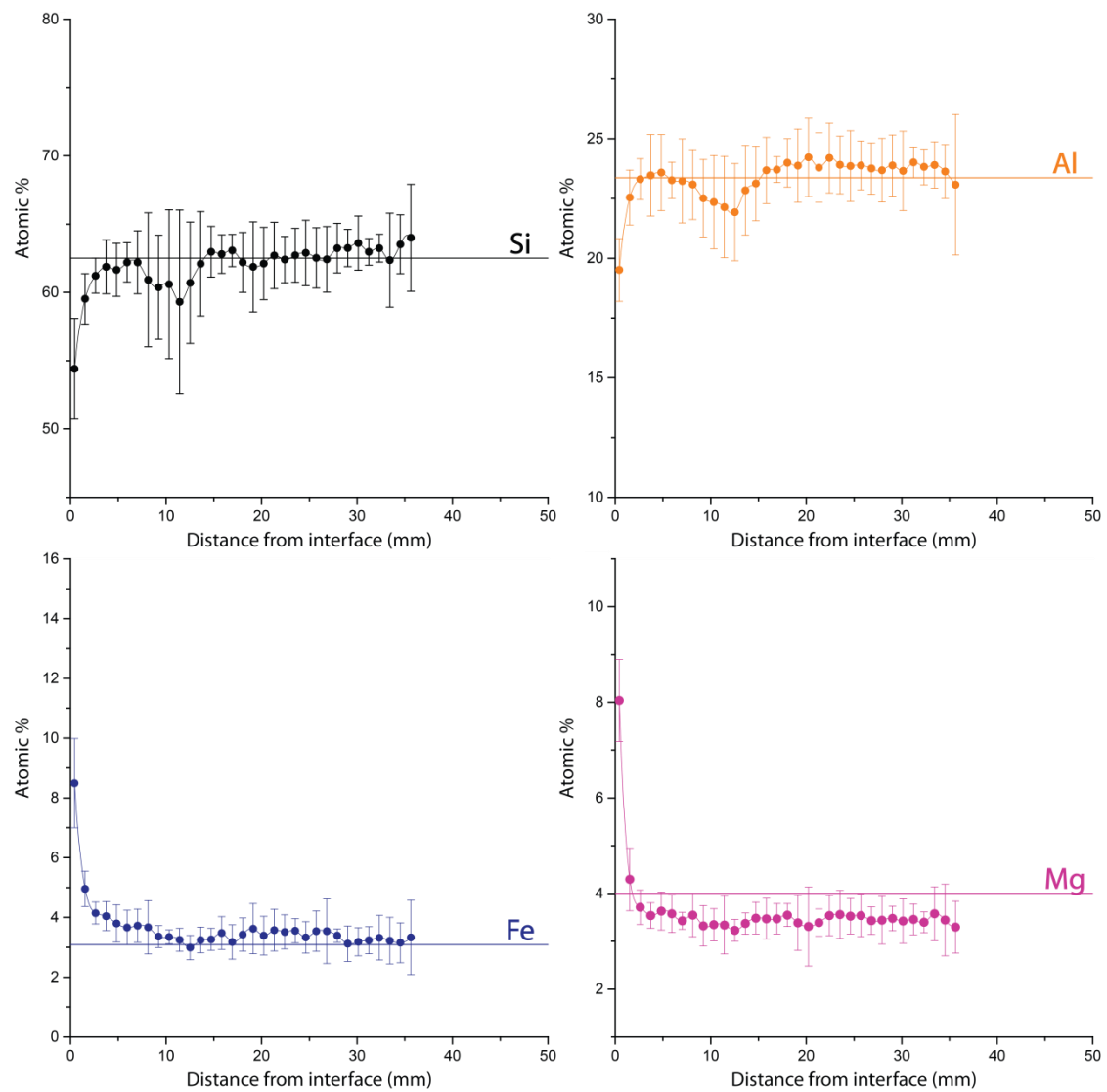


Fig. S1-27 Chemical profiles of major elements Si, Al, Fe and Mg.

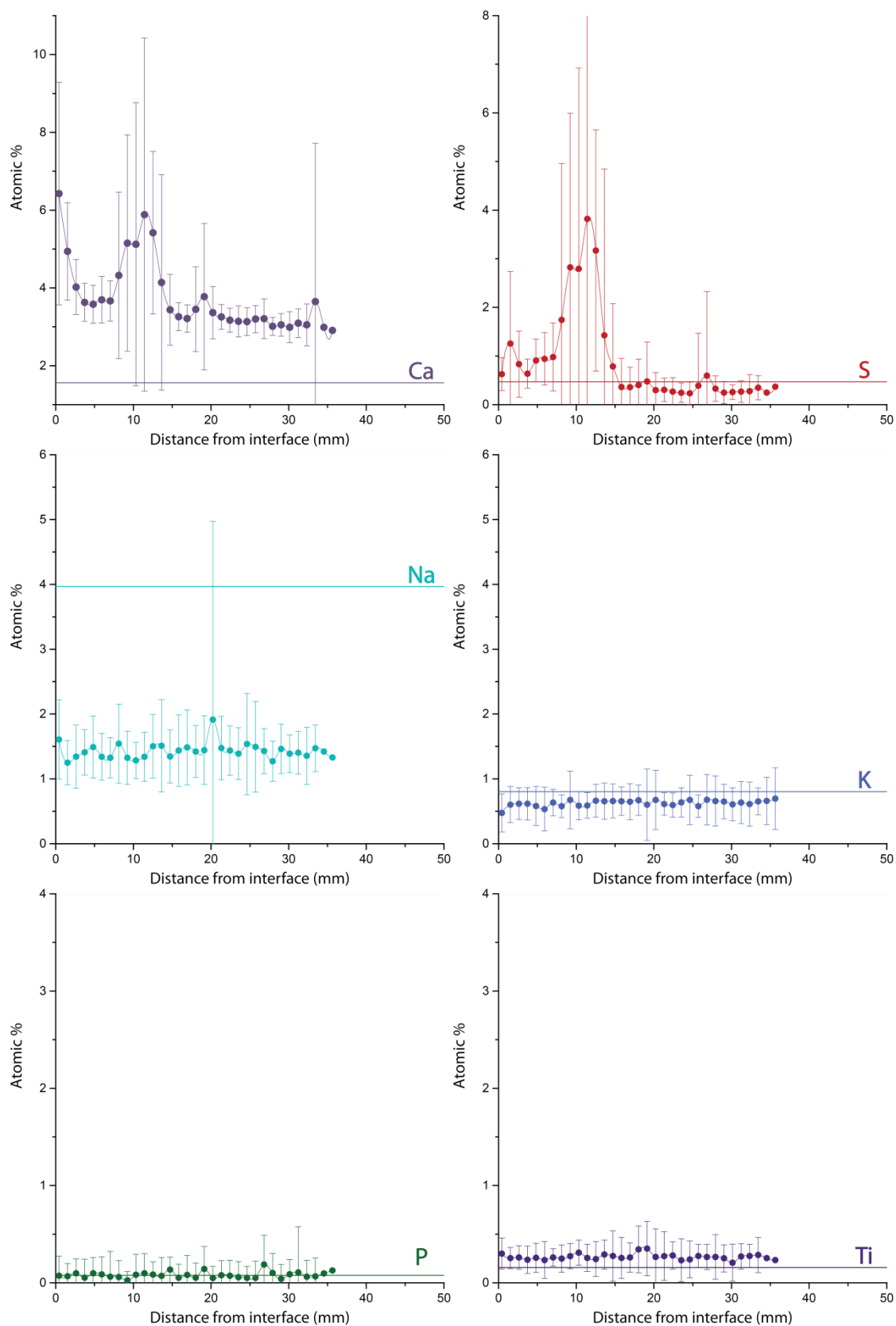


Fig. S1-28 Chemical profiles of minor elements Ca, S, Na, K, P and Ti.

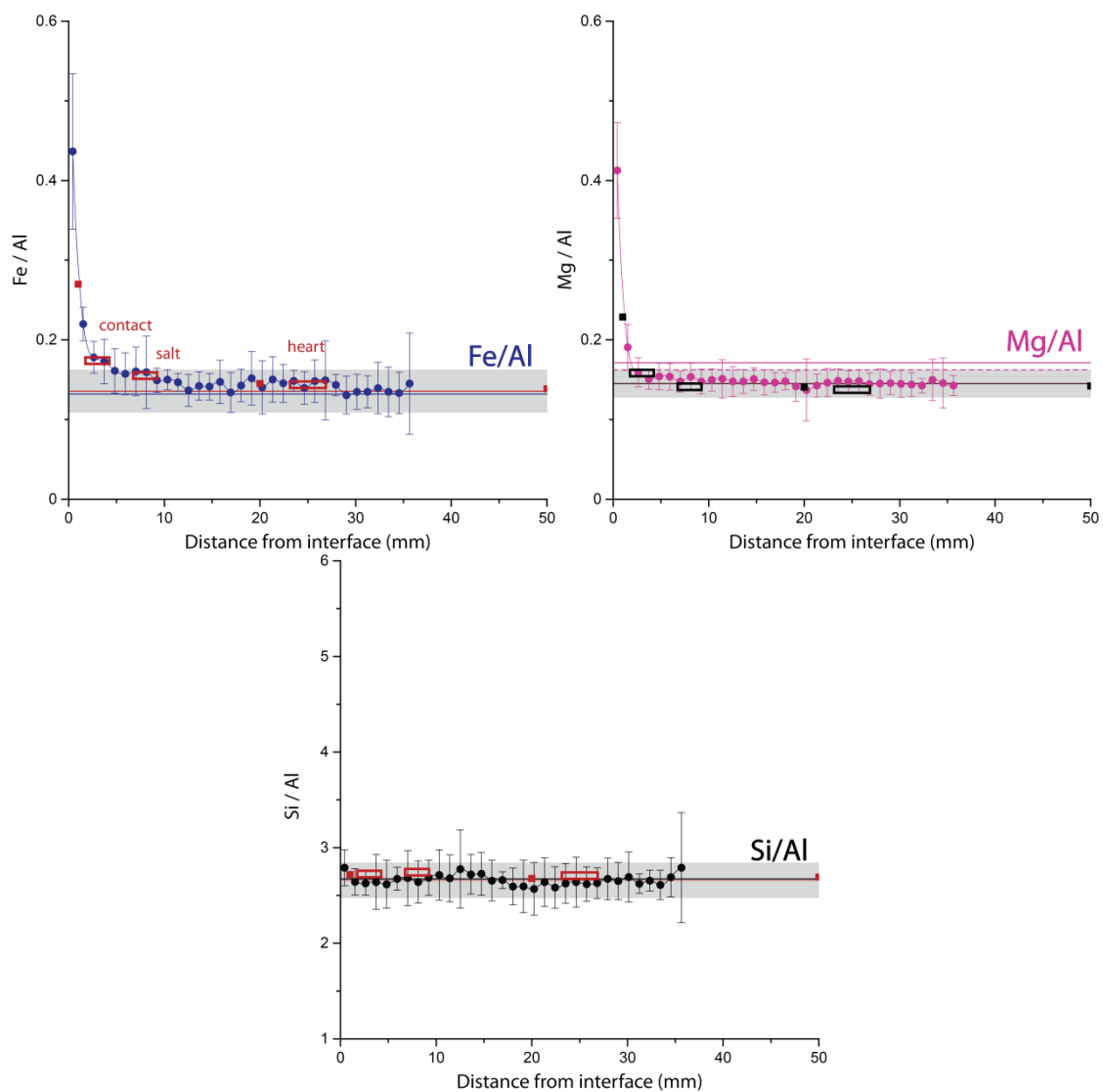


Fig. S1-29 Al-normalized chemical profiles of major elements Fe, Mg and Si. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm).

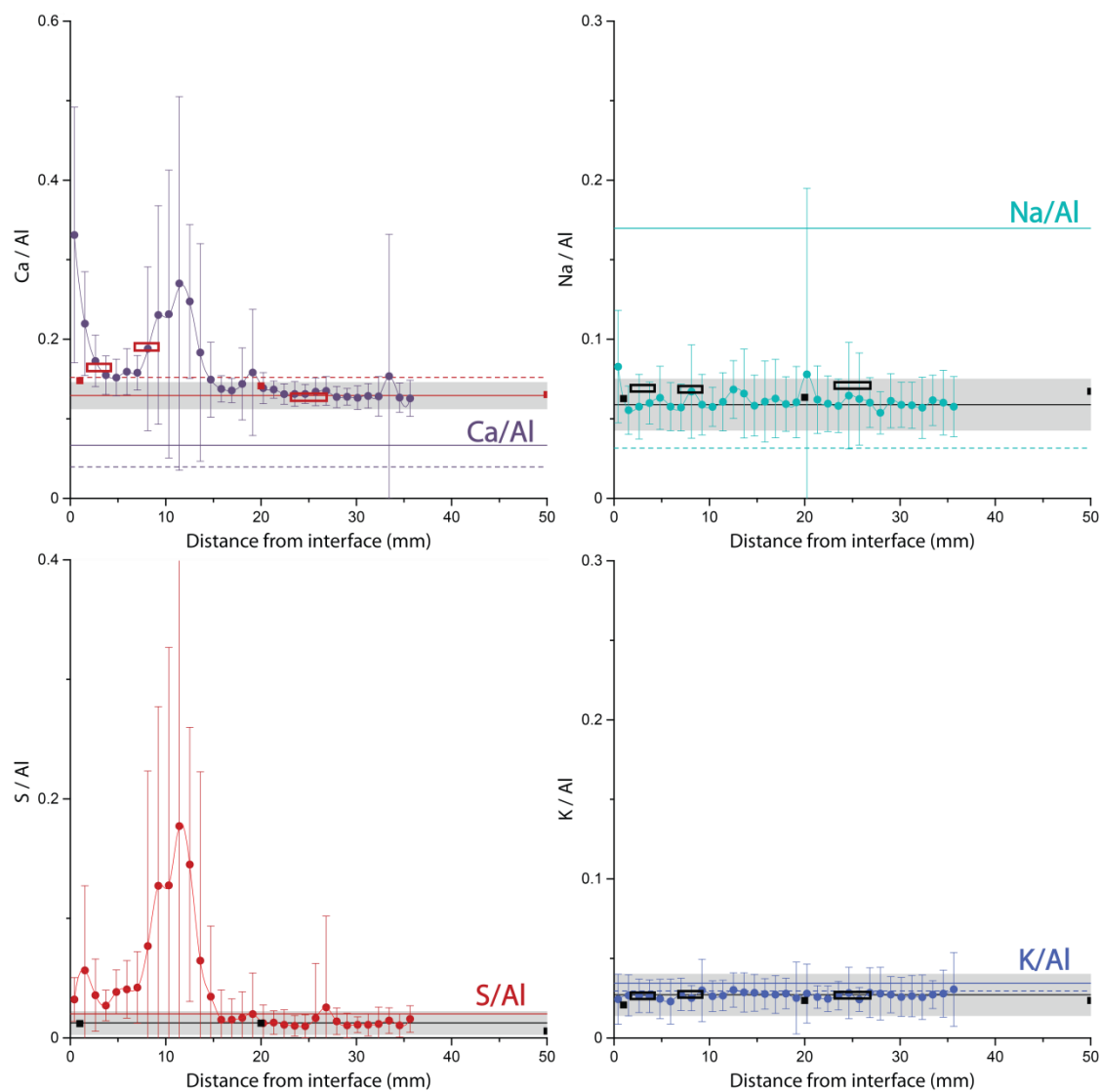


Fig. S1-30 Al-normalized chemical profiles of minor elements Ca, Na, K and S. Squares represent XRF data from BGR (sampling point at 50, 20 and 1 mm).